



CERTIFIED MAIL – Return Receipt Requested

7012 2920 0000 2036 6219

Union Carbide Corporation

A Subsidiary of The Dow Chemical Company

P.O. Box 8361

437 MacCorkle Avenue, SW

Building 300

South Charleston, WV 25303

U.S.A.

September 22, 2015

Mr. William F. Durham, Director
WV Department of Environmental Protection
Division of Air Quality
601 57th Street SE
Charleston, WV 25304

Dear Director Durham,

ATTN: Ms. Beverly McKeone

Subject: Union Carbide Corporation – Institute Facility
Facility ID# 039-00005
45CSR13 Class II Administrative Update Request
Diesel Fueled Emergency Generator Permit G60-C023

Union Carbide Corporation (UCC) is requesting a Class II administrative update to General Permit Registration, G60-C023, for an emergency diesel fueled electrical generator located at the Institute Facility Emergency Operations Center. Under separate cover letter, a request to update UCC's Rule 30 (Title V) operating permit will be provided.

Permit G60-C023 was issued to Bayer CropScience (Facility ID No. 039-00007) and was transferred to UCC with an effective date of August 1, 2015. The purposes of this administrative update request are:

- 1) revise estimated maximum potential emissions for some regulated air pollutants; and,
- 2) reissue the Permit in the name of UCC (Facility ID No. 039-00005).

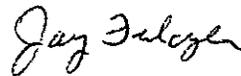
The generator is subject to Federal New Source Performance Standards for Stationary Internal Combustion Engines (NSPS – 40 C.F.R. 60, Subpart IIII) and Federal National Emission Standards for Hazardous Air Pollutants for Stationary Internal Combustion Engines (NESHAPs - 40 C.F.R. 63, Subpart ZZZZ). Compliance with NSPS Subpart IIII provisions is deemed to comply with NESHAPs Subpart ZZZZ. The engine was certified by the manufacturer as meeting USEPA Tier III emission standards for non-road diesel engines.

Mr. William F. Durham, Director
September 22, 2015
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As required by Section 12.1 of WVDAQ Regulation 13, a check in the amount of \$1,300 for the required application fee is enclosed. A Class I legal advertisement will be placed in a local newspaper providing public notice of opportunity to review and comment on the permit application. The affidavit of publication will be sent to your office when received from the newspaper.

Should you require any additional information, please contact me at (304) 747-1354 or via e-mail (JPFedczak@dow.com).

Sincerely,



Jay Fedczak
EH&S Environmental Specialist

cc: Carrie McCumbers (email)



WEST VIRGINIA
 DEPARTMENT OF ENVIRONMENTAL PROTECTION
 DIVISION OF AIR QUALITY
 601 57th Street, SE
 Charleston, WV 25304
 Phone: (304) 926-0475 • www.dep.wv.gov/daq

APPLICATION FOR GENERAL PERMIT REGISTRATION
 CONSTRUCT, MODIFY, RELOCATE OR ADMINISTRATIVELY UPDATE
 A STATIONARY SOURCE OF AIR POLLUTANTS

CONSTRUCTION MODIFICATION RELOCATION CLASS I ADMINISTRATIVE UPDATE
 x CLASS II ADMINISTRATIVE UPDATE

CHECK WHICH TYPE OF GENERAL PERMIT REGISTRATION YOU ARE APPLYING FOR:

<input type="checkbox"/> G10-D – Coal Preparation and Handling	<input type="checkbox"/> G40-C – Nonmetallic Minerals Processing
<input type="checkbox"/> G20-B – Hot Mix Asphalt	<input type="checkbox"/> G50-B – Concrete Batch
<input type="checkbox"/> G30-D – Natural Gas Compressor Stations	<input checked="" type="checkbox"/> G60-C - Class II Emergency Generator
<input type="checkbox"/> G33-A – Spark Ignition Internal Combustion Engines	<input type="checkbox"/> G65-C – Class I Emergency Generator
<input type="checkbox"/> G35-A – Natural Gas Compressor Stations (Flare/Glycol Dehydration Unit)	<input type="checkbox"/> G70-A – Class II Oil and Natural Gas Production Facility

SECTION I. GENERAL INFORMATION

1. Name of applicant (as registered with the WV Secretary of State's Office): Union Carbide Corporation		2. Federal Employer ID No. (FEIN): 131421730	
3. Applicant's mailing address: P. O. Box 8361 South Charleston, WV 25303		4. Applicant's physical address: Route 25, Institute, WV 25112	
5. If applicant is a subsidiary corporation, please provide the name of parent corporation: The Dow Chemical Company			
6. WV BUSINESS REGISTRATION. Is the applicant a resident of the State of West Virginia? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO			
– IF YES, provide a copy of the Certificate of Incorporation/ Organization / Limited Partnership (one page) including any name change amendments or other Business Registration Certificate as Attachment A .			
– IF NO, provide a copy of the Certificate of Authority / Authority of LLC / Registration (one page) including any name change amendments or other Business Certificate as Attachment A .			

SECTION II. FACILITY INFORMATION

7. Type of plant or facility (stationary source) to be constructed, modified, relocated or administratively updated (e.g., coal preparation plant, primary crusher, etc.): Emergency Diesel Fuel-Fired Electric Generator		8a. Standard Industrial Classification Classification (SIC) code: 2869	AND	8b. North American Industry System (NAICS) code: 325199
9. DAQ Plant ID No. (for existing facilities only): _0_ _3_ _9_ - _0_ _0_ _0_ _0_ _5_		10. List all current 45CSR13 and other General Permit numbers associated with this process (for existing facilities only): _____G60-C023_____		

A: PRIMARY OPERATING SITE INFORMATION

11A. Facility name of primary operating site: _____ Institute Facility _____ _____	12A. Address of primary operating site: Mailing: P. O. Box 8361, South Charleston, WV 25303 Physical: Route 25, Institute, WV 25112	
13A. Does the applicant own, lease, have an option to buy, or otherwise have control of the proposed site? X YES <input type="checkbox"/> NO - IF YES, please explain: _____ owner _____ _____ - IF NO, YOU ARE NOT ELIGIBLE FOR A PERMIT FOR THIS SOURCE.		
14A. - For Modifications or Administrative Updates at an existing facility, please provide directions to the present location of the facility from the nearest state road; - For Construction or Relocation permits, please provide directions to the proposed new site location from the nearest state road. Include a MAP as Attachment F. From Charleston take I-64 west toward Huntington. Turn right at Institute Exit. Proceed west approximately 0.5 miles on Route 25 to traffic light. UCC Facility is located on the left. _____ _____		
15A. Nearest city or town: Institute	16A. County: Kanawha	17A. UTM Coordinates: Northing (KM): _4,248.754_____ Easting (KM): _432.189_____ Zone: _17_____
18A. Briefly describe the proposed new operation or change (s) to the facility: Revision of permitted emission limits		19A. Latitude & Longitude Coordinates (NAD83, Decimal Degrees to 5 digits): Latitude: _38.38441_____ Longitude: _-81.77642_____

B: 1ST ALTERNATE OPERATING SITE INFORMATION (only available for G20, G40, & G50 General Permits)

11B. Name of 1 st alternate operating site: _____ N/A _____ _____	12B. Address of 1 st alternate operating site: Mailing: _____ N/A _____ Physical: _____ N/A _____ _____
13B. Does the applicant own, lease, have an option to buy, or otherwise have control of the proposed site? YES <input type="checkbox"/> NO - IF YES, please explain: _____ _____ - IF NO, YOU ARE NOT ELIGIBLE FOR A PERMIT FOR THIS SOURCE.	

14B. — For **Modifications or Administrative Updates** at an existing facility, please provide directions to the present location of the facility from the nearest state road;

— For Construction or Relocation permits, please provide directions to the proposed new site location from the nearest state road. Include a **MAP as Attachment F.**

15B. Nearest city or town:	16B. County:	17B. UTM Coordinates: Northing (KM): _____ Easting (KM): _____ Zone: _____
18B. Briefly describe the proposed new operation or change (s) to the facility:		19B. Latitude & Longitude Coordinates (NAD83, Decimal Degrees to 5 digits): Latitude: _____ Longitude: _____

C: 2ND ALTERNATE OPERATING SITE INFORMATION (only available for G20, G40, & G50 General Permits):

11C. Name of 2 nd alternate operating site: _____ N/A _____ _____	12C. Address of 2 nd alternate operating site: Mailing: _____ N/A _____ Physical: _____ N/A _____ _____
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13C. Does the applicant own, lease, have an option to buy, or otherwise have control of the proposed site? YES NO

— IF YES, please explain: _____

— IF NO, YOU ARE NOT ELIGIBLE FOR A PERMIT FOR THIS SOURCE.

14C. — For **Modifications or Administrative Updates** at an existing facility, please provide directions to the present location of the facility from the nearest state road;

— For Construction or Relocation permits, please provide directions to the proposed new site location from the nearest state road. Include a **MAP as Attachment F.**

15C. Nearest city or town:	16C. County:	17C. UTM Coordinates: Northing (KM): _____ Easting (KM): _____ Zone: _____
18C. Briefly describe the proposed new operation or change (s) to the facility:		19C. Latitude & Longitude Coordinates (NAD83, Decimal Degrees to 5 digits): Latitude: _____ Longitude: _____

<p>20. Provide the date of anticipated installation or change:</p> <p>N/A – existing source</p> <p><input type="checkbox"/> If this is an After-The-Fact permit application, provide the date upon which the proposed change did happen: :</p> <p>____/____/____</p>	<p>21. Date of anticipated Start-up if registration is granted:</p> <p>N/A – existing source</p>
<p>22. Provide maximum projected Operating Schedule of activity/activities outlined in this application if other than 8760 hours/year. (Note: anything other than 24/7/52 may result in a restriction to the facility's operation). Emergency (backup) use for power supply. 500 hr/yr used to estimate annual emissions.</p> <p>Hours per day _____ Days per week _____ Weeks per year _____ Percentage of operation _____</p>	

SECTION III. ATTACHMENTS AND SUPPORTING DOCUMENTS

<p>23. Include a check payable to WVDEP – Division of Air Quality with the appropriate application fee (per 45CSR22 and 45CSR13).</p>
<p>24. Include a Table of Contents as the first page of your application package.</p>
<p>All of the required forms and additional information can be found under the Permitting Section (General Permits) of DAQ's website, or requested by phone.</p>
<p>25. Please check all attachments included with this permit application. Please refer to the appropriate reference document for an explanation of the attachments listed below.</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> ATTACHMENT A : CURRENT BUSINESS CERTIFICATE <input checked="" type="checkbox"/> ATTACHMENT B: PROCESS DESCRIPTION <input type="checkbox"/> ATTACHMENT C: DESCRIPTION OF FUGITIVE EMISSIONS <input checked="" type="checkbox"/> ATTACHMENT D: PROCESS FLOW DIAGRAM <input checked="" type="checkbox"/> ATTACHMENT E: PLOT PLAN <input checked="" type="checkbox"/> ATTACHMENT F: AREA MAP <input checked="" type="checkbox"/> ATTACHMENT G: EQUIPMENT DATA SHEETS AND REGISTRATION SECTION APPLICABILITY FORM <input type="checkbox"/> ATTACHMENT H: AIR POLLUTION CONTROL DEVICE SHEETS <input checked="" type="checkbox"/> ATTACHMENT I: EMISSIONS CALCULATIONS <input checked="" type="checkbox"/> ATTACHMENT J: CLASS I LEGAL ADVERTISEMENT <input type="checkbox"/> ATTACHMENT K: ELECTRONIC SUBMITTAL <input checked="" type="checkbox"/> ATTACHMENT L: GENERAL PERMIT REGISTRATION APPLICATION FEE <input type="checkbox"/> ATTACHMENT M: SITING CRITERIA WAIVER – N/A: Generator located >300 feet from any public dwelling/building <input type="checkbox"/> ATTACHMENT N: MATERIAL SAFETY DATA SHEETS (MSDS) <input checked="" type="checkbox"/> ATTACHMENT O: EMISSIONS SUMMARY SHEETS <input checked="" type="checkbox"/> OTHER SUPPORTING DOCUMENTATION NOT DESCRIBED ABOVE (Equipment Drawings, Aggregation Discussion, etc.) <ul style="list-style-type: none"> Transfer letter of G60-C023 from Director Durham <p>Please mail an original and two copies of the complete General Permit Registration Application with the signature(s) to the DAQ Permitting Section, at the address shown on the front page of this application. Please DO NOT fax permit applications. For questions regarding applications or West Virginia Air Pollution Rules and Regulations, please refer to the website shown on the front page of the application or call the phone number also provided on the front page of the application.</p>

SECTION IV. CERTIFICATION OF INFORMATION

This General Permit Registration Application shall be signed below by a Responsible Official. A Responsible Official is a President, Vice President, Secretary, Treasurer, General Partner, General Manager, a member of a Board of Directors, or Owner, depending on business structure. A business may certify an Authorized Representative who shall have authority to bind the Corporation, Partnership, Limited Liability Company, Association, Joint Venture or Sole Proprietorship. Required records of daily throughput, hours of operation and maintenance, general correspondence, Emission Inventory, Certified Emission Statement, compliance certifications and all required notifications must be signed by a Responsible Official or an Authorized Representative. If a business wishes to certify an Authorized Representative, the official agreement below shall be checked off and the appropriate names and signatures entered. Any administratively incomplete or improperly signed or unsigned Registration Application will be returned to the applicant.

FOR A CORPORATION (domestic or foreign)

I certify that I am a President, Vice President, Secretary, Treasurer or in charge of a principal business function of the corporation

FOR A PARTNERSHIP

I certify that I am a General Partner

FOR A LIMITED LIABILITY COMPANY

I certify that I am a General Partner or General Manager

FOR AN ASSOCIATION

I certify that I am the President or a member of the Board of Directors

FOR A JOINT VENTURE

I certify that I am the President, General Partner or General Manager

FOR A SOLE PROPRIETORSHIP

I certify that I am the Owner and Proprietor

x I hereby certify that (please print or type) Jonathan M. Raess is an Authorized Representative and in that capacity shall represent the interest of the business (e.g., Corporation, Partnership, Limited Liability Company, Association Joint Venture or Sole Proprietorship) and may obligate and legally bind the business. If the business changes its Authorized Representative, a Responsible Official shall notify the Director of the Office of Air Quality immediately, and/or,

I hereby certify that all information contained in this General Permit Registration Application and any supporting documents appended hereto is, to the best of my knowledge, true, accurate and complete, and that all reasonable efforts have been made to provide the most comprehensive information possible

Signature see attached letter of delegation of authority
(please use blue ink) Responsible Official Date

Name & Title Jonathan M. Raess – WVO Responsible Care Leader
(please print or type)

Signature  9/21/2015
(please use blue ink) Authorized Representative (if applicable) Date

Applicant's Name Union Carbide Corporation

Phone & Fax 304-747-2205 304-747-3147
Phone Fax

Email jmraess@dow.com



Union Carbide Corporation
A Subsidiary of The Dow Chemical Company
P.O. Box 8361
437 MacCorkle Avenue, SW
South Charleston, WV 25303
USA

DELEGATION OF AUTHORITY

Pursuant to the Authorization Policy of The Dow Chemical Company, the undersigned, Tyler J. London, Vice President of Union Carbide Corporation, hereby delegates to Jonathan M. Raess, West Virginia Operations Responsible Care Leader, the authority to execute and provide all necessary certifications or verifications of health, safety, and environmental permit applications, reports, agreements, and information request responses to federal, state, and local government agencies for West Virginia Operations.

In further accordance with the Authorization Policy, I explicitly stipulate that the Responsible Care Leader identified above is restricted from re-delegating any authority granted by this Delegation unless that delegation is executed by me or my successor in writing.

May 2, 2013

Date

Tyler J. London
Vice President

Union Carbide Corporation
A Subsidiary of The Dow Chemical Company

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Other Supporting Documentation – Transfer letter

Attachment A

Business Registration Certificate

**WEST VIRGINIA
STATE TAX DEPARTMENT
BUSINESS REGISTRATION
CERTIFICATE**

ISSUED TO:
**UNION CARBIDE CORPORATION
ROUTE 25
INSTITUTE, WV 25112-0000**

BUSINESS REGISTRATION ACCOUNT NUMBER: 1007-4230

This certificate is issued on: **07/17/2011**

*This certificate is issued by
the West Virginia State Tax Commissioner
in accordance with Chapter 11, Article 12, of the West Virginia Code.*

*The person or organization identified on this certificate is registered
to conduct business in the State of West Virginia at the location above.*

This certificate is not transferrable and must be displayed at the location for which issued.

*This certificate shall be permanent until cessation of the business for which the certificate of registration
was granted or until it is suspended, revoked or cancelled by the Tax Commissioner.*

*Change in name or change of location shall be considered a cessation of the business and a new
certificate shall be required.*

**TRAVELING/STREET VENDORS: Must carry a copy of this certificate in every vehicle operated by them.
CONTRACTORS, DRILLING OPERATORS, TIMBER/LOGGING OPERATIONS: Must have a copy of
this certificate displayed at every job site within West Virginia.**

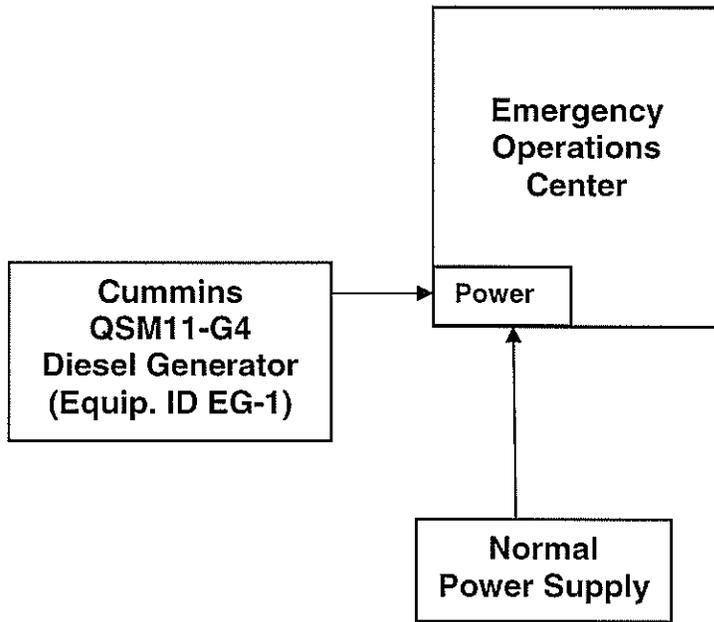
Attachment B

Process Description

UCC owns and operates a stationary reciprocating internal combustion engine that is used to power an emergency (backup) electrical generator. The electrical generator provides backup power to the site emergency response center. The engine (manufactured by Cummins Inc.) is diesel fuel-fired. The engine is ran for testing purposes to ensure proper operation in the event of an electrical outage to the emergency response center.

Attachment D

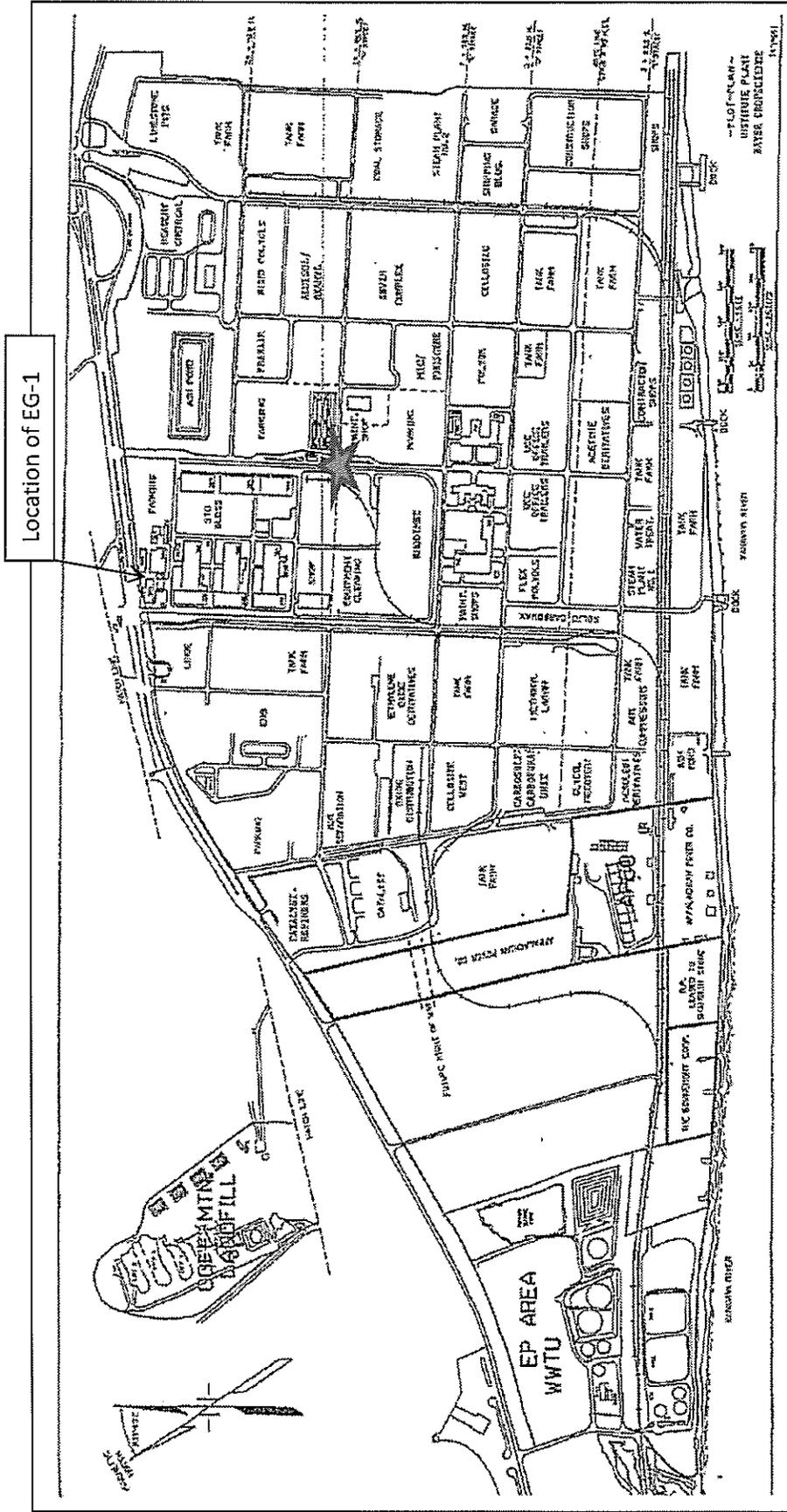
Process Flow Diagram



Attachment E

Plot Plan

Attachment E – Plot Plan



Union Carbide Corporation – Institute Plant - 03900005



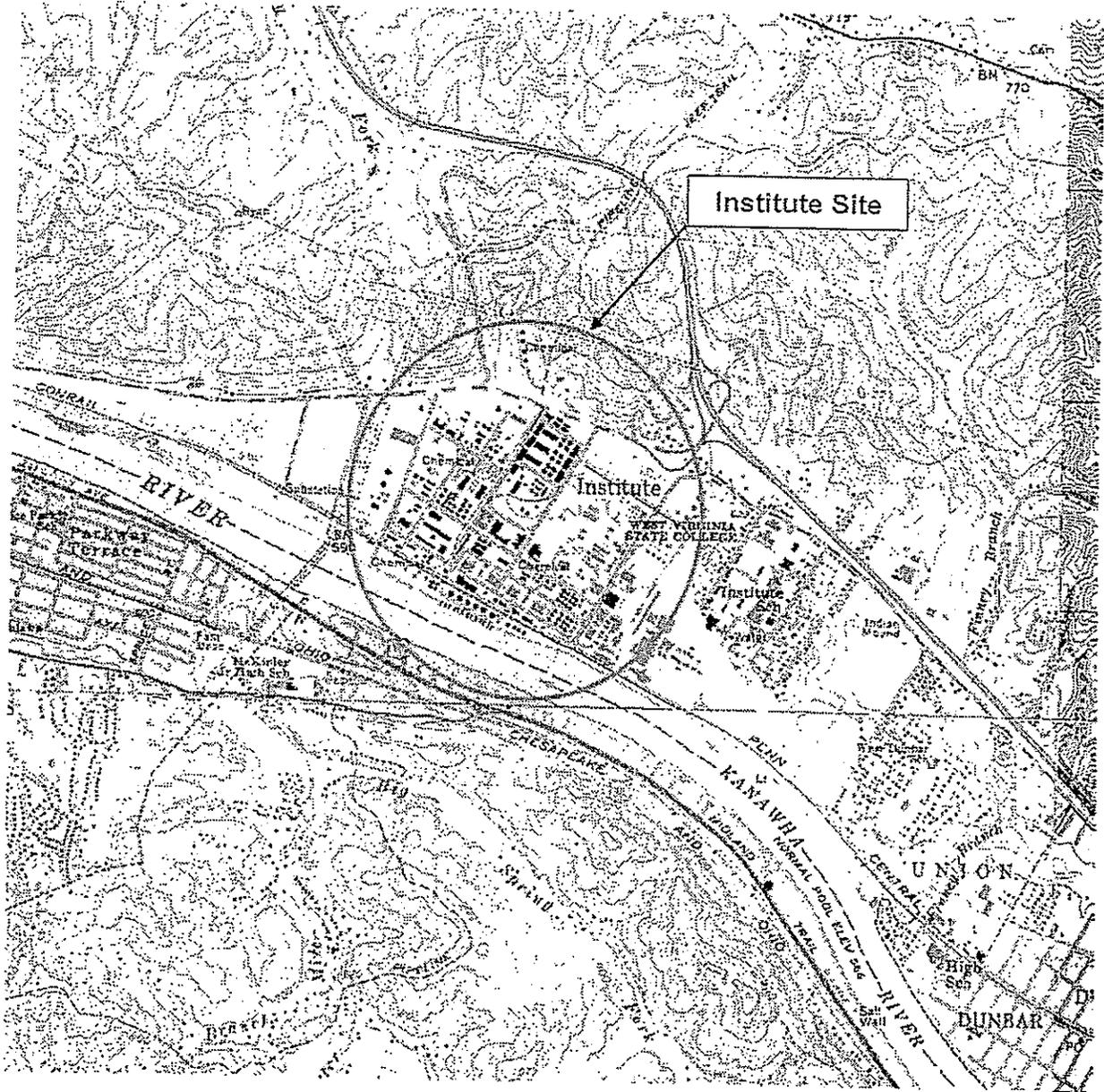
UTMs: 432.189 km Easting, 4248.754 km Northing Elevation: 598 feet above sea level

Attachment F

Area Map

Attachment F

Area Map



Attachment G

G60-C REGISTRATION APPLICATION FORMS

General Permit G60-C Registration Section Applicability Form

General Permit G60-C was developed to allow qualified registrants to seek registration for emergency generator(s).

General Permit G60-C allows the registrant to choose which sections of the permit that they wish to seek registration under. Therefore, please mark which sections that you are applying for registration under. Please keep in mind, that if this registration is approved, the issued registration will state which sections will apply to your affected facility.

Section 5	Reciprocating Internal Combustion Engines (R.I.C.E.)*	<input checked="" type="checkbox"/>
Section 6	Tanks	<input checked="" type="checkbox"/>
Section 7	Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (40CFR60 Subpart IIII)	<input checked="" type="checkbox"/>
Section 8	Standards of Performance for Stationary Spark Ignition Internal Combustion Engines (40CFR60 Subpart JJJJ)	<input type="checkbox"/>

*** Affected facilities that are subject to Section 5 may also be subject to Sections 7 or 8. Therefore, if the applicant is seeking registration under both sections, please select both.**

EMERGENCY GENERATOR ENGINE DATA SHEET

Source Identification Number ¹		EG-1					
Engine Manufacturer and Model		Cummins, Inc Model QSM11-G4					
Manufacturer's Rated bhp/rpm		470/1800					
Source Status ²		ES					
Date Installed/Modified/Removed ³		November 1, 2010					
Engine Manufactured/Reconstruction Date ⁴		October 2010					
Is this a Certified Stationary Compression Ignition Engine according to 40CFR60 Subpart IIII? (Yes or No) ⁵		Yes					
Is this a Certified Stationary Spark Ignition Engine according to 40CFR60 Subpart JJJJ? (Yes or No) ⁶		No					
Engine, Fuel and Combustion Data	Engine Type ⁷	LB4S					
	APCD Type ⁸	A/F (Turbocharged w/Charge Air Cooled)					
	Fuel Type ⁹	2FO					
	H ₂ S (gr/100 scf)	N/A					
	Operating bhp/rpm	470/1800					
	BSFC (Btu/bhp-hr)	6,764					
	Fuel throughput (ft ³ /hr)	23.2 gal/hr					
	Fuel throughput (MMft ³ /yr)	11,600 gal/yr					
Operation (hrs/yr)	500						
Reference ¹⁰	Potential Emissions ¹¹	lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr
MD	NO _x	3.11	0.77				
MD	CO	2.69	0.67				
MD	PM ₁₀	0.16	0.03				

1. Enter the appropriate Source Identification Number for each emergency generator. Generator engines should be designated EG-1, EG-2, EG-3 etc. If more than three (3) engines exist, please use additional sheets.
2. Enter the Source Status using the following codes:

NS	Construction of New Source (installation)	ES	Existing Source
MS	Modification of Existing Source	RS	Removal of Source

3. Enter the date (or anticipated date) of the engine's installation (construction of source), modification or removal.
4. Enter the date that the engine was manufactured, modified or reconstructed.
5. Is the engine a certified stationary compression ignition internal combustion engine according to 40CFR60 Subpart IIII. If so, the engine and control device must be operated and maintained in accordance with the manufacturer's emission-related written instructions. You must keep records of conducted maintenance to demonstrate compliance, but no performance testing is required. If the certified engine is not operated and maintained in accordance with the manufacturer's emission-related written instructions, the engine will be considered a non-certified engine and you must demonstrate compliance according to 40CFR§60.4210 as appropriate.

Provide a manufacturer's data sheet for all engines being registered.

6. Is the engine a certified stationary spark ignition internal combustion engine according to 40CFR60 Subpart JJJJ. If so, the engine and control device must be operated and maintained in accordance with the manufacturer's emission-related written instructions. You must keep records of conducted maintenance to demonstrate compliance, but no performance testing is required. If the certified engine is not operated and maintained in accordance with the manufacturer's emission-related written instructions, the engine will be considered a non-certified engine and you must demonstrate compliance according to 40CFR§60.4243a(2)(i) through (iii), as appropriate.

Provide a manufacturer's data sheet for all engines being registered.

7. Enter the Engine Type designation(s) using the following codes:

LB2S Lean Burn Two Stroke	RB4S Rich Burn Four Stroke
LB4S Lean Burn Four Stroke	

8. Enter the Air Pollution Control Device (APCD) type designation(s) using the following codes:

A/F Air/Fuel Ratio	IR Ignition Retard
HEIS High Energy Ignition System	SIPC Screw-in Precombustion Chambers
PSC Prestratified Charge	LEC Low Emission Combustion
NSCR Rich Burn & Non-Selective Catalytic Reduction	SCR Lean Burn & Selective Catalytic Reduction

9. Enter the Fuel Type using the following codes:

PQ Pipeline Quality Natural Gas	RG Raw Natural Gas
2FO #2 Fuel Oil	LPG Liquid Propane Gas

10. Enter the Potential Emissions Data Reference designation using the following codes. Attach all referenced data to this *Compressor/Generator Data Sheet(s)*.

MD Manufacturer's Data	AP AP-42	
GR GRI-HAPCalc™	OT Other _____	(please list)

11. Enter each engine's Potential to Emit (PTE) for the listed regulated pollutants in pounds per hour and tons per year. PTE shall be calculated at manufacturer's rated brake horsepower and may reflect reduction efficiencies of listed Air Pollution Control Devices. Emergency generator engines may use 500 hours of operation when calculating PTE. PTE data from this data sheet shall be incorporated in the *Emissions Summary Sheet*.

Attachment I

Emissions Calculations

Emergency Generator (EG-1)

Emissions estimates based on factors on the following page.

Hourly Emissions = Emission factor x engine horsepower rating / conversion from grams to lbs

Annual Emissions = (Hourly Emissions) x (500 hours/yr) x (conversion from lbs to tons)

$$\begin{aligned}\text{Hourly NOx} &= (3.0 \text{ g/hp-hr}) \times (470 \text{ hp}) / (453.593 \text{ g/lb}) \\ &= 3.11 \text{ lb/hr}\end{aligned}$$

$$\begin{aligned}\text{Annual NOx} &= (3.11 \text{ lb/hr}) \times (500 \text{ hr/yr}) \times (1 \text{ ton}/2000 \text{ lbs}) \\ &= 0.77 \text{ tons/yr}\end{aligned}$$

$$\begin{aligned}\text{Hourly CO} &= (2.6 \text{ g/hp-hr}) \times (470 \text{ hp}) / (453.593 \text{ g/lb}) \\ &= 2.69 \text{ lb/hr}\end{aligned}$$

$$\begin{aligned}\text{Annual CO} &= (2.69 \text{ lb/hr}) \times (500 \text{ hr/yr}) \times (1 \text{ ton}/2000 \text{ lbs}) \\ &= 0.67 \text{ tons/yr}\end{aligned}$$

$$\begin{aligned}\text{Hourly PM} &= (0.15 \text{ g/hp-hr}) \times (470 \text{ hp}) / (453.593 \text{ g/lb}) \\ &= 0.16 \text{ lb/hr}\end{aligned}$$

$$\begin{aligned}\text{Annual PM} &= (0.16 \text{ lb/hr}) \times (500 \text{ hr/yr}) \times (1 \text{ ton}/2000 \text{ lbs}) \\ &= 0.03 \text{ tons/yr}\end{aligned}$$



Cummins Inc.

Columbus, Indiana 47202-3005

EXHAUST EMISSIONS DATA SHEET

Basic Engine Model:
QSM11-G4 NR3

Curve Number:
FR-20138

G-DRIVE
QSM
1

Engine Critical Parts List:

Date:

CPL: 41778

4Mar08

Displacement : 10.8 litre (661 in³)

Bore : 125 mm (4.92 in.) Stroke : 147 mm (5.79 in.)

No. of Cylinders : 6

Aspiration : Turbocharged and Air to Air Aftercooled

Engine Speed rpm	Standby Power		Prime Power		Continuous Power	
	kWm	hp	kWm	hp	kWm	hp
1500	322	431	292	392	259	347
1800	351	470	318	426	282	378

US EPA/CARB (1800 rpm Only)

This engine, tested in accordance with 40 CFR 89, is in compliance with the US EPA Nonroad Tier 3 regulations:

Component	g/hp-hr	g/kW-hr
NO _x (Oxides of Nitrogen + HC)	3.0	4.0
CO (Carbon Monoxide)	2.6	3.5
PM (Particulate Matter)	0.15	0.20

Test Methods and Conditions:

Tests to demonstrate compliance with the regulated levels shown above were conducted per 40CFR89 (ref. ISO8178-1) and weighted at load points prescribed in Subpart E, Appendix A for Constant Speed Engines. (ref. ISO8178-4, D2).

Fuel Specifications:

40-46 Cetane Number, 0.03 - 0.05 Wt.% Sulfur; Reference ISO8178-5, 40CFR86, 1313-98 Type 2-D and ASTM D975 No. 2 D.

Reference:

25°C (77°F) Air Inlet Temperature, 40°C (104°F) Fuel Inlet Temperature, 100 kPa (29.53 in Hg) Barometric Pressure; 10.7 g/kg (75 grains H₂O/lb) of dry air Humidity (required for NO_x correction); Intake Restriction set to maximum allowable limit for clean filter; Exhaust Back Pressure set to maximum allowable limit.

TA Luft

The Prime rating with emissions corrected to 5% O₂ content, is in compliance with the following TA-Luft standards (see test conditions below):

NO _x : 4000 mg/nm ³	NMHC : 150 mg/nm ³
CO : 650 mg/nm ³	Particulates : 130 mg/nm ³

Test Methods and Conditions:

Steady-State emissions recorded per ISO8178-1 during operation at rated engine speed (+/-2%) and stated constant load (+/-2%) with engine temperatures, pressures and emission rates stabilized.

Fuel Specifications:

40-48 Cetane Number, 0.03 - 0.05 Wt.% Sulfur; Reference ISO8178-5, 40CFR86, 1313-98 Type 2-D and ASTM D975 No. 2-D.

Reference Conditions:

25°C (77°F) Air Inlet Temperature, 40°C (104°F) Fuel Inlet Temperature, 100 kPa (29.53 in Hg) Barometric Pressure; 10.7 g/kg (75 grains H₂O/lb) of dry air Humidity (required for NO_x correction); Intake Restriction set to maximum allowable limit for clean filter; Exhaust Back Pressure set to maximum allowable limit.

Data was taken from a single engine test according to the test methods, fuel specification and reference conditions stated above and is subject to engine-to-engine variability. Test conducted with alternate test methods, instrumentation, fuel or reference conditions can yield different results.

EU NRMM (1500/1800 rpm)

This engine, tested in accordance with directive 97/68/EC, is in compliance with the EU NRMM Stage II regulations.

Component	g/BHP-hr	g/kW-hr
NO _x (Oxides of Nitrogen)	4.5	6.0
HC (Hydrocarbons)	.75	1.0
CO (Carbon Monoxide)	2.6	3.5
PM (Particulate Matter)	0.15	0.20

Test Methods and Conditions:

Tests to demonstrate compliance with the regulated levels shown above were conducted per 97/68/EC (ref. ISO8178-1) and weighted at load points prescribed in 97/68/EC Annex 3, "test procedures". (ref. ISO8178-4, D2).

Fuel Specifications:

52-54 Cetane Number, 0.03 Max. Wt.% Sulfur, as referenced by directive 97/68/EC.

Reference:

25°C (77°F) Air Inlet Temperature, 40°C (104°F) Fuel Inlet Temperature, 100 kPa (29.53 in Hg) Barometric Pressure; 10.7 g/kg (75 grains H₂O/lb) of dry air Humidity (required for NO_x correction); Intake Restriction set to maximum allowable limit for clean filter; Exhaust Back Pressure set to maximum allowable limit.

Attachment J

Class I Legal Advertisement

AIR QUALITY PERMIT NOTICE
Notice of Application

Notice is given that Union Carbide Corporation has applied to the West Virginia Department of Environmental Protection, Division of Air Quality, for a Class II Administrative Update of a General Permit Registration for an emergency generator located on Route 25, in Institute, in Kanawha County, West Virginia. The latitude and longitude coordinates are: 38.38441, -81.77642

The applicant estimates the potential to discharge the following Regulated Air Pollutants will be: Nitrogen Oxides – 0.77 tons per year; Carbon Monoxide – 0.67 tons per year; Particulate Matter – 0.03 tons per year.

Startup of operation is planned to begin on or about the first day of November, 2015. Written comments will be received by the West Virginia Department of Environmental Protection, Division of Air Quality, 601 57th Street, SE, Charleston, WV 25304, for at least 30 calendar days from the date of publication of this notice.

Any questions regarding this permit application should be directed to the DAQ at (304) 926-0499, extension 1227, during normal business hours.

Dated this the (Day) day of (Month), (Year).

By: Union Carbide Corporation
Jonathan Raess
WVO Responsible Care Leader
PO Box 8361
South Charleston, WV 25303

Attachment L

Application Fee

A check for \$1,300 is enclosed with this registration application to cover the required application fee.



2100050 01 SD T 3175 C1M4 -P00050



WEST VIRGINIA DEPT OF ENV PRO DIV O
 601 57TH ST
 CHARLESTON WV 25304-000

YOUR INVOICE NO.	INVOICE AMOUNT	DISCOUNT / DEDUCTION	NET AMOUNT	INVOICE DATE	OUR DOCUMENT NO.	PAYMENT ON BEHALF OF
200000093082	\$1,300.00	\$0.00	\$1,300.00	09/03/2015	2200237040	UNION CARBIDE CORPORATION
ATN:BEV HUDSON IRELAND PROJECT						
TOTAL:						\$1,300.00



DETACH AND RETAIN THIS STUB FOR YOUR RECORDS

CHECK # 2200237040 ATTACHED



Dow International Finance S.a.r.l.
 Attn: Accounts Payable
 2511 E Patrick Road
 Midland, MI 48641-1286

62-20
 311

No. 2200237040

09/10/15

PAYMENT ON BEHALF OF: SEE ATTACHED REMITTANCE ADVICE

PAY TO THE ORDER OF WEST VIRGINIA DEPT OF ENV PRO DIV O
 601 57TH ST
 CHARLESTON WV 25304-000

\$\$\$\$\$\$\$\$\$\$\$1,300.00

NOT VALID AFTER 1 YEAR

Ronald C. Edwards
 AUTHORIZED SIGNATURE

One Thousand Three Hundred and 00/100 Dollars

Attachment O
Emissions Summary Sheet

Other Supporting Documentation

Transfer letter from Director Durham



west virginia department of environmental protection

Division of Air Quality
601 57th Street SE
Charleston, WV 25304
Phone: 304 926 0475 • FAX: 304 926 0479

Earl Ray Tomblin, Governor
Randy C. Huffman, Cabinet Secretary
www.dep.wv.gov

September 4, 2015

Jonathan M. Raess, WVO Responsible Care Leader
Union Carbide Corporation
P.O. Box 8004
South Charleston, WV 25303

RE: Transfer of Permits G60-C023
& R30-03900007-2015 (Group 1A of 8)
Plant ID No. 039-00005
Rule 30

Dear Mr. Raess:

We are in receipt of your letter dated July 21, 2015, wherein you acknowledged that you have examined the permits being transferred that were previously issued to Bayer CropScience, for the Institute Site located Kanawha County, West Virginia.

The transfer of General Permit G60-C023 and Permit R30-03900007-2015 (Group 1A of 8) are hereby acknowledged based upon the facts stated in the above-referenced letter and the commitment by Union Carbide Corporation, to comply with all permit conditions and regulatory requirements applicable to the processes authorized in said permits. Permits G60-C023 and R30-03900007-2015 (Group 1A of 8), and all associated information shall, henceforth, be filed under the name of Union Carbide Corporation.

Should you have any questions concerning this matter, please contact the Permitting Section at the address and telephone number listed above.

Sincerely,

William F. Durham
Director

WFD/jlr

c: File Room

Promoting a healthy environment.