

12/19/14



west virginia department of environmental protection

Division of Air Quality  
601 57<sup>th</sup> Street SE  
Charleston, WV 25304  
Phone 304/926-0475

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

GENERAL PERMIT REGISTRATION APPLICATION  
ENGINEERING EVALUATION / FACT SHEET

NON-CONFIDENTIAL  
ENTIRE DOCUMENT

BACKGROUND INFORMATION

Registration No.:	G65-C370A	Id. No.	_____	Reg.	_____
Plant ID No.:	039-00623	Company	_____		
Applicant:	American Tower Corporation (ATC)	Facility	_____	Region	<u>4</u>
Location:	Chelyan # 99361, Cabin Creek, Kanawha County, WV	Initials	<u>John Legg</u>		
SIC Code:	4813 - Telephone Communications, Except Radiotelephone	Zone:	17		
Application Type:	Class I Administrative Update (No Legal Ad Required)				
Received Date:	October 23, 2014				
Engineer Assigned:	John Legg				
Fee Amount:	\$300.00				
Date Received:	October 27, 2014				
Complete Date:	October 27, 2014				
Applicant Ad Date:	NA				
Newspaper:	NA				
UTM's:	Easting: 455267 km    Northing: 4227614 km				
Latitude/Longitude:	38.195; -81.511				
Description:	Replace the diesel-fueled emergency generator (80 kW/130 hp engine) with a bigger generator (113 kW/198 hp engine).				

TYPE OF PROCESS

The following process description was updated from the previous engineering evaluation (G65-C370):

Replace the GENERAC, diesel-fueled emergency generator (80 kW/130 hp engine, Model SD080, 2012, Iveco Engine, Model F4GE9485A \*J, EPA Tier III approved) with a bigger GENERAC, diesel-fueled emergency generator (113 kW/198 hp engine, Model SD130, 2012, Iveco Engine, Model F4GE9685A \*J, EPA Tier III approved).

The generator will be used to supply standby backup power to the wireless communications facility in case of power failure. The G65-C general permit limits emergency generator operating hours to a maximum of 500 hr/yr.

The generator fuel tank is U.L. 142 approved, a double-walled, sub-base fuel tank with secondary containment.

All emission units covered by this permit are listed below in Table 1:

Table 1: Emission Units

Source ID No.	Description	Engine							Control Equipment
		Manufacturer	Model	Mfg. Date	kW <sub>e</sub> Rating	Speed	Tier	EPA Certificate	
<b>Emergency Generator</b>									
EG-1	GENERAC SD130	Iveco	F4GE9685A*J	2012	113 kW/198 hp	1800 RPM	Tier III	CFPXL06.7DGB-015	N/A
<b>Storage</b>									
		Status	Content	Volume	Dia	Throughput	Orientation	Liquid Height	
T01	Fuel Tank	New	#2 Diesel	510 gallons	No Info	N/A	HORZ	No Info	N/A

### SITE INSPECTION

A site inspection was not conducted for this review. The facility was placed on the regular inspection list of sources, however, no inspection is planned.

**Directions:** Take US Rt. 61 S, turn right on Winifred Hollow Rd. (CR 77/1). Go approximately 4 miles to a commercial blue building on the left side of the road. Turn left crossing over the railroad tracks onto the unmarked road with a large yellow gate (typically not locked, key required). Follow 1.7 miles up the road to a second yellow gate on the left (key required). Follow the main gravel road approximately 3.5 miles back to the cell tower.

### ESTIMATE OF EMISSIONS BY REVIEWING ENGINEER

Maximum controlled emissions from ATC's diesel-fueled emergency generator are summarized in the Table 2 below.

Pollutant	Maximum Emissions						
	Before (G65-C370)		After (G65-C370A)			Delta (Increase)	
	(lb/hr)	(ton/yr)	Factor (g/bhp-hr)	<sup>(1)</sup> (lb/hr)	<sup>(2)</sup> (ton/yr)	(lb/hr)	(ton/yr)
NO <sub>x</sub> + NMHC	0.807	0.202	2.8	1.220	0.305	0.413	0.103
CO	0.202	0.051	0.7	0.305	0.0762	0.103	0.0252
PM <sub>10</sub>	0.0346	0.0086	0.12	0.0523	0.0131	0.0177	0.0437

Table 2: Emissions Increase Resulting from Emergency Generator Replacement at ATC's Chelyan #99361, Cabin Creek, Kanawha County, WV Telecommunication Tower.							
Pollutant	Maximum Emissions						
	Before (G65-C370)		After (G65-C370A)			Delta (Increase)	
	(lb/hr)	(ton/yr)	Factor (g/bhp-hr)	<sup>(1)</sup> (lb/hr)	<sup>(2)</sup> (ton/yr)	(lb/hr)	(ton/yr)
VOC	N/A	N/A	N/A	N/A	N/A	---	---
SO <sub>2</sub>	N/A	N/A	N/A	N/A	N/A	---	---

(1) Hourly Emission Rate (lb/hr) = Emission Factor (g/bhp-hr) X engine bhp (198) X (1 lb/453.5937g)  
(2) Annual Emission Rate (ton/yr) = Hourly Emission Rate (lb/hr) X 500 hr/year X (1 ton/2,000 lb)

### GENERAL PERMIT ELIGIBILITY

The following information was updated from the previous engineering evaluation (G65-C370):

The proposed construction and operation of this facility meets the eligibility (Section 2.3), and limitations and emissions controls (Section 4.1) as specified in the General Permit G65-C.

The engine is subject to 40CFR60 Subpart III, Standards of Performance for Stationary Compression Ignition Internal Combustion Engines because it was manufactured after April 1, 2006, as required by Section 60.4200(a)(2)(i). The engine is a 2007 or later engine and is not a fire pump engine. Section 60.4205(b) requires these engines to comply with the standards in Section 60.4202 that apply to the same model year and maximum engine power. For engines above 50 hp and below 3000 hp, have a displacement less than 10 liters per cylinder, not a fire pump engine, the requirement is to comply with the certification standards in 40CFR89.112 and 40CFR89.113 for all pollutants.

For this engine with a rated power of 113 kW (greater than 75 kW and less than 130 kW), the standards in 40CFR89.112, Table 1 are:

- NMHC+NOx: 4.0 g/kw-hr
- CO: 5.0 g/kw-hr
- PM: 0.30 g/kw-hr

The hourly, EPA Tier III approved emissions factors (g/kW-hr) for the generator engine given in the permit application (on page entitled: "GENERAC Statement of Exhaust Emissions 2012 IVECO Diesel Fueled Generator") are all lower than the standard emission factors found in 40CFR89.112, Table 1, i.e., the new generator should meet the emissions standards for 40CFR60, Subpart III.

- NMHC+NOx: 3.8 g/kW-hr
- CO: 0.9 g/kW-hr
- PM: 0.075 g/kW-hr

Section 89.113 states that the exhaust opacity must not exceed:

- 20 percent during acceleration
- 15 percent during lugging
- 50 percent during peaks in acceleration or lugging modes

As noted above, the engine has been certified by EPA (Certificate # CFPXL06.7DGB-015) and therefore will comply with the above standards.

Section 60.4209(a) requires a non-resettable hour meter. This requirement is already in the General Permit G65-C conditions.

For 2007 model year and later engines, Section 60.4211(c) requires that the owner/operator purchase an engine certified to the emissions standard in Section 60.4205(b), and install and configure the engine according to the manufacturer's specifications.

#### RECOMMENDATION TO DIRECTOR

ATC's request to replace the existing emergency generator with a bigger generator (going from an 80 kW/130 hp engine to a 113 kW/198 hp engine) and to operate the new emergency generator at its Chelyan #99361, Cabin Creek, Kanawha County, WV site meets the requirements of General Permit G65-C and all applicable rules and therefore should be granted a General Permit Registration to update and operate the said facility.

  
\_\_\_\_\_  
John Legg  
Permit Writer

December 19, 2014  
\_\_\_\_\_  
Date

*West Virginia Department of Environmental Protection*  
*Earl Ray Tomblin*  
*Governor*

*Division of Air Quality*

*Randy C. Huffman*  
*Cabinet Secretary*

# Class I General Permit G65-C Registration to ~~Construct~~Update



for the  
Prevention and Control of Air Pollution in regard to the  
Construction, Modification, Relocation, Administrative Update and  
Operation of Emergency Generators

*The permittee identified at the facility listed below is authorized to  
construct the stationary sources of air pollutants identified herein in accordance  
with all terms and conditions of General Permit G65-C.*

**G65-~~C370~~C370A**

Issued to:  
**American Tower Corporation**  
**Chelyan, WV Facility**  
**Site #99361**  
**ID No. 039-00623**

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*John A. Benediet*  
*William F. Durham*  
*Director*

*Issued: May 21, 2009* • *Effective: ~~October 10, 2012~~*

December 19, 2014

This Class I General Permit Registration ~~does not supercede~~supercedes and ~~replace an existing~~replaces permit G65-C370.

Facility Location: Chelyan, Kanawha County, West Virginia  
Mailing Address: PO Box 63604, Phoenix, AZ 85082  
Facility Description: Telecommunication Tower Facility  
SIC Codes: 4813 – Telephone Communications, Except Radio  
NAICS Codes: 517110 – Wired Telecommunications Carrier  
UTM Coordinates: 455267 km Easting • 4227614 km Northing • Zone 17

Lat./Long. Coordinates: 38.195; -80.511

Registration Type: Construction Class II Administrative Update

Description of Change: Construction Increase the size of ~~athe~~ diesel-fired, emergency generator/ from an 80 kW/131hp engine set used to produce electrical power in the event of an electrical outage at Site # 99361, Chelyan, Kanawha County, WV a 113 kW/198 hp engine.

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*Any person whose interest may be affected, including, but not necessarily limited to, the applicant and any person who participated in the public comment process, by a permit or registration issued, modified or denied by the Secretary may appeal such action of the Secretary to the Air Quality Board pursuant to article one [§§ 22B-1-1 et seq.], Chapter 22B of the Code of West Virginia. West Virginia Code §22-5-14.*

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*The source is not subject to 45CSR30.*

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All registered facilities under Class I General Permit G65-C are subject to Sections 1.0, 2.0, 3.0, and 4.0.

In addition to the above applicable sections, the following sections of Class I General Permit G65-C apply to the registrant:

**Section 5 Reciprocating Internal Combustion Engines (R.I.C.E.)**

**Emission Units**

Source ID No.	Description	Engine							Control Equipment
		Manufacturer	Model	Mfg. Date	kWE Rating	Speed	Tier	EPA Certificate	
Emergency Generator									
EG-1	GENERAC <del>SD080SD130</del>	Iveco	<del>F4GE9485AE4</del> <del>GE9685A*J</del>	2012	<del>80198</del>	1800 RPM	Tier III	CFFXL06.7DGB-015	N/A
Storage									
		Status	Content	Volume	Dia	Throughput	Orientation	Liquid Height	
T01	Fuel Tank	New	#2 Diesel	<del>300510</del> gallons	<del>2.97 ft</del> <del>No Info</del>	N/A	HORZ (Sub-base)	<del>2 ft</del> <del>No Info</del>	N/A

**Emission Limitations**

Source ID#	Nitrogen-Oxide (NOx) + NMHC		Carbon Monoxide (CO)		Particulate Matter ≤ 10µm in diameter (PM <sub>10</sub> )	
	(lb/hr)	(ton/yr)*	(lb/hr)	(ton/yr)*	(lb/hr)	(ton/yr)*
EG-1 Emergency Generator Engine	<del>0.807122</del>	<del>0.20231</del>	<del>0.20231</del>	<del>0.05108</del>	<del>0.034606</del>	<del>0.008602</del>

\* Based on 500 hr/yr of operation.

Source ID#	Volatile Organic Compounds (VOC)		Sulfur Dioxide (SO <sub>2</sub> )	
	(lb/hr)	(ton/yr)*	(lb/hr)	(ton/yr)*
EG-1 Emergency Generator Engine	N/A	N/A	N/A	N/A

\* Based on 500 hr/yr of operation.