9400 Holly Avenue NE | Bldg 3, Suite 300 | Albuquerque, NM 87122 | P (505) 266-6611 | F (505) 266-7738
trinityconsultants.com

Trinity Consultants

November 22, 2016

Mr. Isreal Tavarez
Environmental Health Manager
Air Quality Program (AQP)
Environmental Health Department
PO Box 1293
Albuquerque, NM 87103

Re: Application to Modify Air Quality Permit #3012 - New 350KW Emergency Generator to Replace Existing at DOE's NTC, Kirtland Airforce Base, Albuquerque, NM

Dear Mr. Tavarez,

Enclosed is an air permit application package to modify Authority-to-Construct Permit #3012 that proposes a new natural gas-fired 350 KW Cummins standby emergency generator to replace the existing 100 KW generator. The generator will back up commercial utility power for DOE's National Training Center (NTC) located in a remote area on the southeast side of Kirtland Air Force Base (KAFB). The new generator will be located near Bldg. #30133 east of the intersection of A St. SE. and Barrack Rd. SE, Albuquerque, NM 87117. Please refer to the Google Earth aerial pics and UTM coordinates in the application for the generator location.

A $1,904.00 Cummins check submitted for AQP review fees should be sufficient to cover the new NSPS JJJJ engine and emissions between 1 to 5 tons per year that accommodates the proposed highest single pollutant (CO).

The NO_X, CO and VOC emissions used in the application are based on the 40 CRF Part 60 Subpart JJJJ Table 1 for ignition engines of more than 130 hp. The particulate matter, (PM) emissions were calculated using the EPA AP-42 Emission Factors found under table 3.2-2 for Uncontrolled Emission Factors for 4-Stroke Lean-Burn Engines. The SO_2 emissions were calculated based on the on 5 gr S/100 scf FERC limit for pipeline quality natural gas.

An EPA Certificate of Conformity for the new NSPS JJJJ emergency stationary natural gas engine is provided in lieu of emissions testing.

If you have any related questions or suggestions, please contact me by phone at 505-266-6611 or via email at vhershberger@trinityconsultants.com
Thank you for your assistance,

TRINITY CONSULTANTS

Vernon Hershberger

Vernon Hershberger, CHMM, LEED AP
Sr. Consultant

Cc: Garrett Eldridge, East Regional Sales Exec., Cummins Rocky Mountain
E. Wayne Adams, Facilities Manager, DOE NTC

16 NOV 22 PM 4:39
RECEIVED
ENVIRONMENTAL HEALTH

Application Forms

City of Albuquerque

Environmental Health Department
Air Quality Program

Permit Application Checklist

Any person seeking a permit under 20.11.41 NMAC, Authority-to-Construct Permits, shall do so by filing a written application with the Department. Prior to ruling a submitted application complete each application submitted shall contain the required items listed below. **This checklist must be returned with the application.**

Applications that are ruled incomplete because of missing information will delay any determination or the issuance of the permit. The Department reserves the right to request additional relevant information prior to ruling the application complete in accordance with 20.11.41 NMAC.

All applicants shall:

1. ☑ Fill out and submit the *Pre-permit Application Meeting Request* form
   a. ☑ Attach a copy to this application

2. ☑ Attend the pre-permit application meeting
   a. ☑ Attach a copy of the completed *Pre-permit Application Meeting Checklist* to this application

3. ☑ Provide public notice to the appropriate parties
   a. ☑ Attach a copy of the completed *Notice of Intent to Construct* form to this form
   Neighborhood Association(s):
   i. Clayton Heights/Lomas Del Cielo
   ii. Elder Homestead Neighborhood Assoc.
   iii. Four Hills Village Home Owner Assoc.
   iv. Juan Tabo Hills Neighborhood Assoc.
   v. Kirtland Community Assoc.
   vi. La Mesa Community Improvement Assoc.
   vii. Mirabella-Miravista Neighborhood Assoc.
   viii. Parkland Hills Neighborhood Assoc.
   ix. Siesta Hills Neighborhood Assoc.
   x. Singing Arrow Neighborhood Assoc.
   xi. South Los Altos Neighborhood Assoc.
   xii. South San Pedro Neighborhood Assoc.
   xiii. Southeast Heights Neighborhood Assoc.
   xiv. Terracita Home Owner Assoc.
   xv. Trumbull Village Assoc.
   xvi. University Heights Neighborhood Assoc.
   xvii. Victory Hills Neighborhood Assoc.
   xviii. Willow Wood Neighborhood Assoc.
   xix. Yale Village Neighborhood Assoc.

Coalition(s):

xx. District 6 Coalition of Neighborhood Associations

xxi. East Gateway Coalition

b.☑ Attach a copy of the completed *Public Sign Notice Guideline* form

4. Fill out and submit the *Permit Application*. All applications shall:

A. ☑ be made on a form provided by the Department. Additional text, tables, calculations or clarifying information may also be attached to the form.

B. ☑ at the time of application, include documentary proof that all applicable permit application review fees have been paid as required by 20 NMAC 11.02. Please refer to the attached permit application worksheet.
Cummins check for $1,904 payable to City of Albuquerque Fund 242" provided.

C. ☑ contain the applicant's name, address, and the names and addresses of all other owners or operators of the emission sources.

D. ☑ contain the name, address, and phone number of a person to contact regarding questions about the facility.

E. ☑ indicate the date the application was completed and submitted

F. ☑ contain the company name, which identifies this particular site.

G. ☑ contain a written description of the facility and/or modification including all operations affecting air emissions.

H. ☑ contain the maximum and standard operating schedules for the source after completion of construction or modification in terms of hours per day, days per week, and weeks per year.

I. ☑ provide sufficient information to describe the quantities and nature of any regulated air contaminant (including any amount of a hazardous air pollutant) that the source will emit during:

- Normal operation
- Maximum operation
- Abnormal emissions from malfunction, start-up and shutdown

J. ☑ include anticipated operational needs to allow for reasonable operational scenarios to avoid delays from needing additional permitting in the future.

K. ☑ contain a map, such as a 7.5-minute USGS topographic quadrangle, showing the exact location of the source; and include physical address of the proposed source.

L. ☑ contain an aerial photograph showing the proposed location of each process equipment unit involved in the proposed construction, modification, relocation, or technical revision of the source except for federal agencies or departments involved in

national defense or national security as confirmed and agreed to by the department in writing.

M. ☑ contain the UTM zone and UTM coordinates.

N. ☑ include the four digit Standard Industrialized Code (SIC) and the North American Industrial Classification System (NAICS).

O. ☑ contain the types and **potential emission rate** amounts of any regulated air contaminants the new source or modification will emit. Complete appropriate sections of the application; attachments can be used to supplement the application, but not replace it.

P. ☑ contain the types and **controlled** amounts of any regulated air contaminants the new source or modification will emit. Complete appropriate sections of the application; attachments can be used to supplement the application, but not replace it.

Q. ☑ contain the basis or source for each emission rate (include the manufacturer's specification sheets, AP-42 Section sheets, test data, or other data when used as the source). *Cummins mfr. emissions data for specific Subpart JJJJ NSPS engine attached.*

R. ☑ contain all calculations used to estimate **potential emission rate** and **controlled** emissions.

S. N/A contain the basis for the estimated control efficiencies and sufficient engineering data for verification of the control equipment operation, including if necessary, design drawings, test reports, and factors which affect the normal operation (e.g. limits to normal operation).

T. ☑ contain fuel data for each existing and/or proposed piece of fuel burning equipment. *Pipeline quality natural gas.*

U. N/A contain the anticipated maximum production capacity of the entire facility and the requested production capacity after construction and/or modification.

V. ☑ contain the stack and exhaust gas parameters for all existing and proposed emission stacks.

W. N/A provide an ambient impact analysis using a atmospheric dispersion model approved by the US Environmental Protection Agency (EPA), and the Department to demonstrate compliance with the ambient air quality standards for the City of Albuquerque and Bernalillo County (See 20.11.01 NMAC). If you are modifying an existing source, the modeling must include the emissions of the entire source to demonstrate the impact the new or modified source(s) will have on existing plant emissions.

X. N/A contain a preliminary operational plan defining the measures to be taken to mitigate source emissions during malfunction, startup, or shutdown.

Y. N/A contain a process flow sheet, including a material balance, of all components of the facility that would be involved in routine operations. Indicate all emission points, including fugitive points. E*mergency backup engine, simple process.*

Z. N/A contain a full description, including all calculations and the basis for all control efficiencies presented, of the equipment to be used for air pollution control. This shall include a process flow sheet or, if the Department so requires, layout and assembly drawings, design plans, test reports and factors which affect the normal equipment operation, including control and/or process equipment operating limitations.

AA. N/A contain description of the equipment or methods proposed by the applicant to be used for emission measurement. *EPA Certificate of Conformity provided in lieu of stack testing the new emergency generator engine.*

BB. ☑ be signed under oath or affirmation by a corporate officer, authorized to bind the company into legal agreements, certifying to the best of his or her knowledge the truth of all information submitted.

City of Albuquerque

Environmental Health Department
Air Quality Program

Permit Application Review Fee Instructions

All source registration, authority-to-construct, and operating permit applications for stationary or portable sources shall be charged an application review fee according to the fee schedule in 20.11.2 NMAC. These filing fees are required for both new construction, reconstruction, and permit modifications applications. Qualified small businesses as defined in 20.11.2 NMAC may be eligible to pay one-half of the application review fees and 100% of all applicable federal program review fees.

Please fill out the permit application review fee checklist and submit with a check or money order payable to the "City of Albuquerque Fund 242" and either:

1. be delivered in person to the Albuquerque Environmental Health Department, 3rd floor, Suite 3023 or Suite 3027, Albuquerque-Bernalillo County Government Center, south building, One Civic Plaza NW, Albuquerque, NM or,

2. mailed to Attn: Air Quality Program, Albuquerque Environmental Health Department, P.O. Box 1293, Albuquerque, NM 87103.

The department will provide a receipt of payment to the applicant. The person delivering or filing a submittal shall attach a copy of the receipt of payment to the submittal as proof of payment Application review fees shall not be refunded without the written approval of the manager. If a refund is requested, a reasonable professional service fee to cover the costs of staff time involved in processing such requests shall be assessed. Please refer to 20.11.2 NMAC (effective January 10, 2011) for more detail concerning the "Fees" regulation as this checklist does not relieve the applicant from any applicable requirement of the regulation.

City of Albuquerque

Environmental Health Department
Air Quality Program
Permit Application Review Fee Checklist

Please completely fill out the information in each section. Incompleteness of this checklist may result in the Albuquerque Environmental Health Department not accepting the application review fees. If you should have any questions concerning this checklist, please call 768-1972.

I. COMPANY INFORMATION:

Company Name	DOE National Training Center/Chenega Support Services, LLC	
Company Address	Bldg. 30133, Barracks Rd. & A Street, KAFB, Albuquerque, NM 87117	
Facility Name	DOE National Training Center (NTC)	
Facility Address	Bldg. 30133, Barracks Rd. SE and A Street SE., Kirtland AFB, NM 87117	
Contact Person	E. Wayne Adams, Facilities Manager	
Contact Person Phone Number	(505) 845-2067, wadams@ntc.doe.gov	
Are these application review fees for an existing permitted source located within the City of Albuquerque or Bernalillo County?	~~Yes~~	**No**
If yes, what is the permit number associated with this modification?	Permit # N/A	
Is this application review fee for a Qualified Small Business as defined in 20.11.2 NMAC? (See Definition of Qualified Small Business on Page 4)	~~Yes~~	**No**

II. STATIONARY SOURCE APPLICATION REVIEW FEES:

If the application is for a new stationary source facility, please check all that apply. If this application is for a modification to an existing permit please see Section III.

Check All That Apply	Stationary Sources	Review Fee	Program Element
Stationary Source Review Fees (Not Based on Proposed Allowable Emission Rate)			
	Source Registration required by 20.11.40 NMAC	$ 544.00	2401
	A Stationary Source that requires a permit pursuant to 20.11.41 NMAC or other board regulations and are not subject to the below proposed allowable emission rates	$ 1,088.00	2301
x	*Not Applicable*	*See Sections Below*	
Stationary Source Review Fees (Based on the Proposed Allowable Emission Rate for the single highest fee pollutant)			
	Proposed Allowable Emission Rate Equal to or greater than 1 tpy and less than 5 tpy	$ 816.00	2302
	Proposed Allowable Emission Rate Equal to or greater than 5 tpy and less than 25 tpy	$ 1,632.00	2303
	Proposed Allowable Emission Rate Equal to or greater than 25 tpy and less than 50 tpy	$ 3,265.00	2304
	Proposed Allowable Emission Rate Equal to or greater than 50 tpy and less than 75 tpy	$ 4,897.00	2305
	Proposed Allowable Emission Rate Equal to or greater than 75 tpy and less than 100 tpy	$ 6,530.00	2306
	Proposed Allowable Emission Rate Equal to or greater than 100 tpy	$8,162.00	2307
x	*Not Applicable*	*See Section Above*	
Federal Program Review Fees (In addition to the Stationary Source Application Review Fees above)			
	40 CFR 60 - "New Source Performance Standards" (NSPS)	$ 1,088.00	2308
	40 CFR 61 - "Emission Standards for Hazardous Air Pollutants (NESHAPs)	$ 1,088.00	2309
	40 CFR 63 - (NESHAPs) Promulgated Standards	$ 1,088.00	2310
	40 CFR 63 - (NESHAPs) Case-by-Case MACT Review	$ 10,883.00	2311
	20.11.61 NMAC, Prevention of Significant Deterioration (PSD) Permit	$ 5,442.00	2312
	20.11.60 NMAC, Non-Attainment Area Permit	$ 5,442.00	2313
x	*Not Applicable (N/A)*	*N/A*	

III. MODIFICATION TO EXISTING PERMIT APPLICATION REVIEW FEES:

If the permit application is for a modification to an existing permit, please check all that apply. If this application is for a new stationary source facility, please see Section II.

Check All That Apply	Modifications	Review Fee	Program Element
	Modification Application Review Fees (Not Based on Proposed Allowable Emission Rate)		
	Proposed modification to an existing stationary source that requires a permit pursuant to 20.11.41 NMAC or other board regulations and are not subject to the below proposed allowable emission rates	$ 1,088.00	2321
x	*Not Applicable*	*See Sections Below*	
	Modification Application Review Fees (Based on the Proposed Allowable Emission Rate for the single highest fee pollutant)		
X	Proposed Allowable Emission Rate Equal to or greater than 1 tpy and less than 5 tpy	$ 816.00	2322
	Proposed Allowable Emission Rate Equal to or greater than 5 tpy and less than 25 tpy	$ 1,632.00	2323
	Proposed Allowable Emission Rate Equal to or greater than 25 tpy and less than 50 tpy	$ 3,265.00	2324
	Proposed Allowable Emission Rate Equal to or greater than 50 tpy and less than 75 tpy	$ 4,897.00	2325
	Proposed Allowable Emission Rate Equal to or greater than 75 tpy and less than 100 tpy	$ 6,530.00	2326
	Proposed Allowable Emission Rate Equal to or greater than 100 tpy	$8,162.00	2327
	Not Applicable	*See Section Above*	
	Major Modifications Review Fees (In addition to the Modification Application Review Fees above)		
	20.11.60 NMAC, Permitting in Non-Attainment Areas	$ 5,442.00	2333
	20.11.61 NMAC, Prevention of Significant Deterioration	$ 5,442.00	2334
x	*Not Applicable*	*Not Applicable*	
	Federal Program Review Fees (This section applies only if a Federal Program Review is triggered by the proposed modification) (These fees are in addition to the Modification and Major Modification Application Review Fees above)		
X	40 CFR 60 - "New Source Performance Standards" (NSPS)	$ 1,088.00	2328
	40 CFR 61 - "Emission Standards for Hazardous Air Pollutants (NESHAPs)	$ 1,088.00	2329
	40 CFR 63 - (NESHAPs) Promulgated Standards	$ 1,088.00	2330
	40 CFR 63 - (NESHAPs) Case-by-Case MACT Review	$ 10,883.00	2331
	20.11.61 NMAC, Prevention of Significant Deterioration (PSD) Permit	$ 5,442.00	2332
	20.11.60 NMAC, Non-Attainment Area Permit	$ 5,442.00	2333
	Not Applicable	*Not Applicable*	

IV. ADMINISTRATIVE AND TECHNICAL REVISION APPLICATION REVIEW FEES:

If the permit application is for an administrative or technical revision of an existing permit issued pursuant to 20.11.41 NMAC, please check one that applies.

Check One	Revision Type	Review Fee	Program Element
	Administrative Revisions	$ 250.00	2340
	Technical Revisions	$ 500.00	2341
x	*Not Applicable*	*See Sections II, III or V*	

V. PORTABLE STATIONARY SOURCE RELOCATION FEES:

If the permit application is for a portable stationary source relocation of an existing permit, please check one that applies.

Check One	Portable Stationary Source Relocation Type	Review Fee	Program Element
	No New Air Dispersion Modeling Required	$ 500.00	2501
	New Air Dispersion Modeling Required	$ 750.00	2502
x	*Not Applicable*	*See Sections II, III or V*	

VI. Please submit a check or money order in the amount shown for the total application review fee.

Section Totals	Review Fee Amount
Section II Total	$ 1,904.00
Section III Total	$
Section IV Total	$
Section V Total	$
Total Application Review Fee	**$ 1,904.00**

I, the undersigned, a responsible official of the applicant company, certify that to the best of my knowledge, the information stated on this checklist, give a true and complete representation of the permit application review fees which are being submitted. I also understand that an incorrect submittal of permit application reviews may cause an incompleteness determination of the submitted permit application and that the balance of the appropriate permit application review fees shall be paid in full prior to further processing of the application.

Signed this 15 **day of** NOVEMBER **2016**

E. Wayne Adams
Print Name

Facilities Manager
Print Title

E. Wayne Adams
Signature

Definition of Qualified Small Business as defined in 20.11.2 NMAC:
"Qualified small business" means a business that meets all of the following requirements:

(1) a business that has 100 or fewer employees;
(2) a small business concern as defined by the federal Small Business Act;
(3) a source that emits less than 50 tons per year of any individual regulated air pollutant, or less than 75 tons per year of all regulated air pollutants combined; and
(4) a source that is not a major source or major stationary source.

Note: Beginning January 1, 2011, and every January 1 thereafter, an increase based on the consumer price index shall be added to the application review fees. The application review fees established in Subsection A through D of 20.11.2.18 NMAC shall be adjusted by an amount equal to the increase in the consumer price index for the immediately-preceding year. Application review fee adjustments equal to or greater than fifty cents ($0.50) shall be rounded up to the next highest whole dollar. Application review fee adjustments totaling less than fifty cents ($0.50) shall be rounded down to the next lowest whole dollar. The department shall post the application review fees on the city of Albuquerque environmental health department air quality program website.

City of Albuquerque
Environmental Health Department
Air Quality Program
Please mail this application to **P.O. Box 1293, Albuquerque, NM 87103**
or hand deliver between 8:00am - 5:00pm Monday - Friday to:
3rd Floor, Suite 3023 - One Civic Plaza NW, Albuquerque, New Mexico 87103
(505) 768 – 1972 aqd@cabq.gov (505) 768 - 1977 (Fax)

20.11.41 NMAC Air Quality Permit Application
For

EMERGENCY NATURAL GAS ENGINES

SUBJECT TO FEDERAL (USEPA) NEW SOURCE PERFORMANCE STANDARDS (NSPS)

Section 1. General Information

Date Submitted: ___/___/2016

1. Company Name: Dept. of Energy/Chenega Support Services, LLC Ph: (505) 845-2067 Fax: (505) 845-4077

2. Company Address: Bldg. 30133, Barracks Rd & A Steet City: Albuquerque State: NM Zip: 87117

3. Company Mailing Address (if different): P.O. Box 18041, KAFB, Albuquerque, NM Zip: 87185

4. Company Contact: Mr. E. Wayne Adams Title: Facilities Manager Ph: (505) 845-2067 Email: wadams@ntc.doe.gov

5. Facility Name: DOE National Training Center (NTC) Facility Hours: 8am to 5pm for general business

6. Facility Address: Bldg. 30133, A St. SE and Barrack Rd. SE City: Kirtland AFB, Albuquerque State: NM Zip: 87117

7. Local Business Mailing Address (if different): Chenega Support Services, P.O. Box 18041, ABQ, NM 87185-0041 Email: wadams@ntc.doe.gov

8. Facility Environmental Contact: Mr. E. Wayne Adams Title: Facilities Manager Ph: (505) 845-2067 Fax: (505) 845-2067

9. Email Address: wadams@ntc.doe.gov 10. Type of Business: National Security - U.S. Dept. of Energy

11. Environmental Consultant Name and E-Mail Address (if applicable): Vernon Hershberger - vhershberger@trinityconsultants.com

12. North American Industry Classification System (NAICS): 561210 13. Standard Industrial Classification (SIC): 8744

14. UTM coordinates (required): Zone 13S, 362642 mE, 3,874806mN 15. Facility Ph: (505) 845-2067 Fax: (505) 845-4077

16. Billing Contact: E. Wayne Adams Title: Facilities Manager Ph: (505) 845-2067 Fax: (505) 845-4077

17. Billing Address: Chenega Support Services, LLC P.O. Box 18041, City: Albuquerque State: NM Zip: 87185-0041

18. Is this an Initial Installation; OR Modification of an Existing Unit: Modification 19. Current or requested operating hrs/yr: <200 hrs/yr

20. Is engine or genset installed: ____ Yes _X_ No If yes, date installed: ___/___/___ If no, anticipated installation date: after permit issued.

Provide an engine spec sheet and a detailed site plan or plat of the property where engine or genset is to be installed.

Section 2. Natural Gas Spark Ignition Internal Combustion Engine for Stationary Emergency Engines

Provide engine rating in horsepower (Hp) as determined by manufacturer's spec sheet.

Process Equipment Unit	Manufacturer	Model Number	Serial Number	Manufacturer Date	Modification Date	Engine Size In Horsepower (Hp)	Size of Generator In kilowatts (kW)
Engine	Cummins	KTA19G	TBD	TBD	N/A	530	N/A
Generator	Cummins	350GFEB	TBD	TBD	N/A	N/A	350

Section 3. Stack and Emissions Information

Stack Height Above Ground & Stack Diameter In Feet		Stack Temperature	Stack Flow Rate & Exit Direction
~8 ft. – approx. stack top height	Approx. 0.5 feet diameter	~1,287.0 ^{0}F	~3,121 ft^3/min – Flow Rate Exit – upward

Section 4. Potential Emission Rate (Uncontrolled Emissions)

Use manufacturer's data, compliance performance stack test data or the attached USEPA Emission Factors in grams per horsepower-hour (g/Hp-hr) associated with the Engine's Horsepower Rating and Model Year

Model Year	Pollutant	Emission Factors g/Hp-hr	TIMES	Actual Engine Hp	EQUALS	Emission In Grams Per Hour	DIVIDE	Grams Per Pound	EQUALS	Emission in Pounds Per Hour	TIMES	Potential Operating Hours Per Year	DIVIDE	Pounds Per Ton	EQUALS	Emission In Tons Per Year
Likely ~2016	CO	4.00	x	530	=	2120.0	÷	453.6	=	4.7	x	8,760	÷	2,000	=	20.5
	NO_x	2.00	x	530	=	1060.0	÷	453.6	=	2.3	x	8,760	÷	2,000	=	10.2
	NMHC	1.00	x	530	=	530.0	÷	453.6	=	1.2	x	8,760	÷	2,000	=	5.1
	*NOx + NMHC	3.00	x	530	=	1,590.0	÷	453.6	=	3.5	x	8,760	÷	2,000	=	15.4
	**SO_x	0.051	x	530	=	27.0	÷	453.6	=	0.060	x	8,760	÷	2,000	=	0.26
	***PM	0.036	x	530	=	19.0	÷	453.6	=	0.042	x	8,760	÷	2,000	=	0.18

* If the USEPA Emission Factor or manufacturer's data is given as combined NOx + NMHC, also provide individual emission factors for NOx and NMHC from the manufacturer or other approved methodology for estimating individual emission factors.
** Manufacturer's SOx factor shall be used when larger than the USEPA Emission Factor.
*** Particulate Matter (PM) emissions are considered to be < 1μm (micron). Therefore, PM emissions also reflect PM_{10} & $PM_{2.5}$.

Section 5. Potential to Emit (Requested allowable rate) (Controlled Emissions)

Transfer each pollutant Emission in Pounds Per Hour from column above to the Emission in Pounds Per Hour column below. Complete the equation after inserting the Requested Operating Hours Per Year. Pound Per Hour rate for each pollutant must be met if performance testing is requested.

Pollutant	Emission in Pounds Per Hour	TIMES	Requested Operating Hours Per Year	EQUALS	Pounds Per Year	DIVIDE	Pounds Per Ton	EQUALS	Emission In Tons Per Year
CO	4.7	x	200	=	934.7	÷	2,000	=	0.47
NO_x	2.3	x	200	=	467.4	÷	2,000	=	0.23
NMHC	1.2	x	200	=	233.7	÷	2,000	=	0.12
*NOx + NMHC	3.5	x	200	=	701.1	÷	2,000	=	0.35
**SO_x	0.060	x	200	=	11.9	÷	2,000	=	0.0060
***PM	0.042	x	200	=	8.4	÷	2,000	=	0.0042

I, the undersigned, a responsible officer of the applicant company, certify that to the best of my knowledge, the information stated on this application, together with associated drawings, specifications, and other data, give a true and complete representation of the existing, modified existing, or planned new stationary source with respect to air pollution sources and control equipment. I also understand that any significant omissions, errors, or misrepresentations in these data will be cause for revocation of part or all of the resulting source registration and air quality permit.

Mr. E. Wayne Adams	E. Wayne Adams	Facilities Manager	11 / 15 /2016
Print Name	Sign Name	Title	Date

Air Emissions Calculations

Emission Calculation Spreadsheet

350 KW Cummins Nat. Gas Emerg. Generator, DOE National Training Center (NTC), KAFB

Engine's Information and Characteristics:

Engine Type	Lean Burn Engine
Power:	530.0 hp engine
Power:	350.0 kW generator
BSFC:	7881.0 BTU/hp-hr
BSFC:	0.007881 MMBtu/hp-hr
Fuel Rate:	4,176.9 scf/hr

Conversions and/or Assumptions

	453.0 grams/lbs
	7,000.0 grain/lbs
Nat Gas Heat Content:	1,000.0 Btu/scf
Sulfur Content:	5.0 gr S/100 scf

Criteria Air Pollutants	EPA AP-42		Manufacturer Emission Data	Table 1 Subpart JJJJ of Part 60	Values for Permit Application Forms						Emission Factor Reference
	Emission Factor[1]		Emission Factor[2]	Emission Limit	Emission Factor	Hourly Emissions		Annual Emissions[5]		PTE[6]	
	lb/MMBtu	(g/hp-hr)	(g/hp-hr)	(g/hp-hr)	(g/hp-hr)	g/hr	lb/hr	lb/yr	ton/yr	ton/yr	
Carbon Monoxide			1.50	4.00	4.00	2120.0	4.7	934.7	0.47	20.5	Table 1 to Subpart JJJJ of Part 60
Nitrogen Oxides[7]			1.50	2.00	2.00	1060.0	2.3	467.4	0.23	10.2	Table 1 to Subpart JJJJ of Part 60
Particulate Matter[3]	1.01E-02	0.036	-	-	0.036	19.0	0.042	8.4	0.0042	0.18	EPA AP-42 Section 3.2 Table 3.2-2 for 4 Stroke Lean-Burn Engines
Sulfur Oxides[4]			-	-	0.051	27.0	0.060	11.9	0.0060	0.26	Note 4
Volatile Organic Compounds[7]	1.18E-01	0.42	0.18	1.00	1.00	530.0	1.2	233.7	0.12	5.1	Table 1 to Subpart JJJJ of Part 60
NO_x + NMHC	Not available		*1.68*	3.0	3.00	1590.0	3.5	701.1	0.35	15.4	

The generator operates a maximum of **200** **hours per year** and must be powered by natural gas.

[1] Emission factors from EPA AP-42 Section 3.2 Table 3.2-2 for 4 Stroke Lean-Burn Engines

[2] Cummin's Engine Emission Data, Power Generation KTA19G. Standby Power

[3] Particulate matter emissions are considered to be < 10 μm in size. Therefore PM emissions also reflect particulate matter less than 10 μm (PM_{10}) and particulate matter less than 2.5 μm ($PM_{2.5}$).

[4] SO_2 emissions based on fuel consumption and fuel sulfur content of

gr S/100 scf * fuel scf/hr * 1 lb/7000 gr * 64 lb SO_2/ 32 lb S *453g/ lb *1/530 hp

[5] The following equation was used to calculate annual emissions for each pollutant:

Annual emissions (lb/yr) = Hourly emissions (lb/hr) * 200 (hrs/yr)

Annual emissions (ton/yr) = Hourly emissions (lb/hr) * 200 (hrs/yr) / 2000 (lb/ton)

[6] Potential to Emit (PTE) was calculated based on the number of hours in a year (8760 hours per year).

The following equation was used to calculate PTE:

PTE (ton/yr) = Hourly emissions (lb/hr) * 8760 (hrs/yr) / 2000 (lb/ton)

Table 1 to Subpart JJJJ of Part 60—NO_X, CO, and VOC Emission Standards for Stationary Non-Emergency SI Engines ≥100 HP (Except Gasoline and Rich Burn LPG), Stationary SI Landfill/Digester Gas Engines, and Stationary Emergency Engines >25 HP

Engine type and fuel	Maximum engine power	Manufacture date	Emission standards[a]					
			g/HP-hr			ppmvd at 15% O_2		
			NO_X	CO	VOC[d]	NO_X	CO	VOC[d]
Non-Emergency SI Natural Gas[b] and Non-Emergency SI Lean Burn LPG[b]	100≤HP<500	7/1/2008	2.0	4.0	1.0	160	540	86
		1/1/2011	1.0	2.0	0.7	82	270	60
Non-Emergency SI Lean Burn Natural Gas and LPG	500≤HP<1,350	1/1/2008	2.0	4.0	1.0	160	540	86
		7/1/2010	1.0	2.0	0.7	82	270	60
Non-Emergency SI Natural Gas and Non-Emergency SI Lean Burn LPG (except lean burn 500≤HP<1,350)	HP≥500	7/1/2007	2.0	4.0	1.0	160	540	86
	HP≥500	7/1/2010	1.0	2.0	0.7	82	270	60
Landfill/Digester Gas (except lean burn 500≤HP<1,350)	HP<500	7/1/2008	3.0	5.0	1.0	220	610	80
		1/1/2011	2.0	5.0	1.0	150	610	80
	HP≥500	7/1/2007	3.0	5.0	1.0	220	610	80
		7/1/2010	2.0	5.0	1.0	150	610	80
Landfill/Digester Gas Lean Burn	500≤HP<1,350	1/1/2008	3.0	5.0	1.0	220	610	80
		7/1/2010	2.0	5.0	1.0	150	610	80
Emergency	25<HP<130	1/1/2009	[c]10	387	N/A	N/A	N/A	N/A
	HP≥130		2.0	4.0	1.0	160	540	86

3.2 Natural Gas-fired Reciprocating Engines

3.2.1 General[1-3]

Most natural gas-fired reciprocating engines are used in the natural gas industry at pipeline compressor and storage stations and at gas processing plants. These engines are used to provide mechanical shaft power for compressors and pumps. At pipeline compressor stations, engines are used to help move natural gas from station to station. At storage facilities, they are used to help inject the natural gas into high pressure natural gas storage fields. At processing plants, these engines are used to transmit fuel within a facility and for process compression needs (e.g., refrigeration cycles). The size of these engines ranges from 50 brake horsepower (bhp) to 11,000 bhp. In addition, some engines in service are 50 - 60 years old and consequently have significant differences in design compared to newer engines, resulting in differences in emissions and the ability to be retrofitted with new parts or controls.

At pipeline compressor stations, reciprocating engines are used to power reciprocating compressors that move compressed natural gas (500 - 2000 psig) in a pipeline. These stations are spaced approximately 50 to 100 miles apart along a pipeline that stretches from a gas supply area to the market area. The reciprocating compressors raise the discharge pressure of the gas in the pipeline to overcome the effect of frictional losses in the pipeline upstream of the station, in order to maintain the required suction pressure at the next station downstream or at various downstream delivery points. The volume of gas flowing and the amount of subsequent frictional losses in a pipeline are heavily dependent on the market conditions that vary with weather and industrial activity, causing wide pressure variations. The number of engines operating at a station, the speed of an individual engine, and the amount of individual engine horsepower (load) needed to compress the natural gas is dependent on the pressure of the compressed gas received by the station, the desired discharge pressure of the gas, and the amount of gas flowing in the pipeline. Reciprocating compressors have a wider operating bandwidth than centrifugal compressors, providing increased flexibility in varying flow conditions. Centrifugal compressors powered by natural gas turbines are also used in some stations and are discussed in another section of this document.

A compressor in storage service pumps gas from a low-pressure storage field (500 - 800 psig) to a higher pressure transmission pipeline (700 - 1000 psig) and/or pumps gas from a low-pressure transmission line (500 - 800 psig) to a higher pressure storage field (800 - 2000 psig).

Storage reciprocating compressors must be flexible enough to allow operation across a wide band of suction and discharge pressures and volume variations. The compressor must be able to compress at high compression ratios with low volumes and compress at low compression ratios with high volumes. These conditions require varying speeds and load (horsepower) conditions for the reciprocating engine powering the reciprocating compressor.

Reciprocating compressors are used at processing plants for process compression needs (e.g. refrigeration cycles). The volume of gas compressed varies, but the pressure needed for the process is more constant than the other two cases mentioned above.

3.2.2 Process Description[1-3]

Natural gas-fired reciprocating engines are separated into three design classes: 2-cycle (stroke) lean-burn, 4-stroke lean-burn, and 4-stroke rich-burn. Two-stroke engines complete the power cycle in a

single crankshaft revolution as compared to the two crankshaft revolutions required for 4-stroke engines. All engines in these categories are spark-ignited.

In a 2-stroke engine, the air-to-fuel charge is injected with the piston near the bottom of the power stroke. The intake ports are then covered or closed, and the piston moves to the top of the cylinder, compressing the charge. Following ignition and combustion, the power stroke starts with the downward movement of the piston. As the piston reaches the bottom of the power stroke, exhaust ports or valves are opened to exhaust, or scavenge, the combustion products, and a new air-to-fuel charge is injected. Two-stroke engines may be turbocharged using an exhaust-powered turbine to pressurize the charge for injection into the cylinder and to increase cylinder scavenging. Non-turbocharged engines may be either blower scavenged or piston scavenged to improve removal of combustion products. Historically, 2-stroke designs have been widely used in pipeline applications. However, current industry practices reflect a decline in the usage of new 2-stroke engines for stationary applications.

Four-stroke engines use a separate engine revolution for the intake/compression cycle and the power/exhaust cycle. These engines may be either naturally aspirated, using the suction from the piston to entrain the air charge, or turbocharged, using an exhaust-driven turbine to pressurize the charge. Turbocharged units produce a higher power output for a given engine displacement, whereas naturally aspirated units have lower initial costs and require less maintenance.

Rich-burn engines operate near the stoichiometric air-to-fuel ratio (16:1) with exhaust excess oxygen levels less than 4 percent (typically closer to 1 percent). Additionally, it is likely that the emissions profile will be considerably different for a rich-burn engine at 4 percent oxygen than when operated closer to stoichiometric conditions. Considerations such as these can impact the quantitative value of the emission factor presented. It is also important to note that while rich-burn engines may operate, by definition, with exhaust oxygen levels as high as 4 percent, in reality, most will operate within plus or minus 1 air-to-fuel ratio of stoichiometry. Even across this narrow range, emissions will vary considerably, sometimes by more than an order of magnitude. Air-to-fuel ratios were not provided in the gathered emissions data used to develop the presented factors.

Lean-burn engines may operate up to the lean flame extinction limit, with exhaust oxygen levels of 12 percent or greater. The air to fuel ratios of lean-burn engines range from 20:1 to 50:1 and are typically higher than 24:1. The exhaust excess oxygen levels of lean-burn engines are typically around 8 percent, ranging from 4 to 17 percent. Some lean-burn engines are characterized as clean-burn engines. The term "clean-burn" technology is a registered trademark of Cooper Energy Systems and refers to engines designed to reduce NO_x by operating at high air-to-fuel ratios. Engines operating at high air-to-fuel ratios (greater than 30:1) may require combustion modification to promote stable combustion with the high excess air. These modifications may include a turbo charger or a precombustion chamber (PCC). A turbo charger is used to force more air into the combustion chamber, and a PCC is used to ignite a fuel-rich mixture that propagates into the main cylinder and ignites the very lean combustion charge. Lean-burn engines typically have lower oxides of nitrogen (NO_x) emissions than rich-burn engines.

3.2.3 Emissions

The primary criteria pollutants from natural gas-fired reciprocating engines are oxides of nitrogen (NO_x), carbon monoxide (CO), and volatile organic compounds (VOC). The formation of nitrogen oxides is exponentially related to combustion temperature in the engine cylinder. The other pollutants, CO and VOC species, are primarily the result of incomplete combustion. Particulate matter (PM) emissions include trace amounts of metals, non-combustible inorganic material, and condensible,

semi-volatile organics which result from volatized lubricating oil, engine wear, or from products of incomplete combustion. Sulfur oxides are very low since sulfur compounds are removed from natural gas at processing plants. However, trace amounts of sulfur containing odorant are added to natural gas at city gates prior to distribution for the purpose of leak detection.

It should be emphasized that the actual emissions may vary considerably from the published emission factors due to variations in the engine operating conditions. This variation is due to engines operating at different conditions, including air-to-fuel ratio, ignition timing, torque, speed, ambient temperature, humidity, and other factors. It is not unusual to test emissions from two identical engines in the same plant, operated by the same personnel, using the same fuel, and have the test results show significantly different emissions. This variability in the test data is evidenced in the high relative standard deviation reported in the data set.

3.2.3.1 Nitrogen Oxides -

Nitrogen oxides are formed through three fundamentally different mechanisms. The principal mechanism of NO_x formation with gas-fired engines is thermal NO_x. The thermal NO_x mechanism occurs through the thermal dissociation and subsequent reaction of nitrogen (N_2) and oxygen (O_2) molecules in the combustion air. Most NO_x formed through the thermal NO_x mechanism occurs in high-temperature regions in the cylinder where combustion air has mixed sufficiently with the fuel to produce the peak temperature fuel/air interface. The second mechanism, called prompt NO_x, occurs through early reactions of nitrogen molecules in the combustion air and hydrocarbon radicals from the fuel. Prompt NO_x reactions occur within the flame and are usually negligible compared to the level of NO_x formed through the thermal NO_x mechanism. The third mechanism, fuel NO_x, stems from the evolution and reaction of fuel-bound nitrogen compounds with oxygen. Natural gas has negligible chemically bound fuel nitrogen (although some molecular nitrogen is present).

Essentially all NO_x formed in natural gas-fired reciprocating engines occurs through the thermal NO_x mechanism. The formation of NO_x through the prompt NO_x mechanism may be significant only under highly controlled situations in rich-burn engines when the thermal NO_x mechanism is suppressed. The rate of NO_x formation through the thermal NO_x mechanism is highly dependent upon the stoichiometric ratio, combustion temperature, and residence time at the combustion temperature. Maximum NO_x formation occurs through the thermal NO_x mechanism near the stoichiometric air-to-fuel mixture ratio since combustion temperatures are greatest at this air-to-fuel ratio.

3.2.3.2 Carbon Monoxide and Volatile Organic Compounds -

CO and VOC emissions are both products of incomplete combustion. CO results when there is insufficient residence time at high temperature to complete the final step in hydrocarbon oxidation. In reciprocating engines, CO emissions may indicate early quenching of combustion gases on cylinder walls or valve surfaces. The oxidation of CO to carbon dioxide (CO_2) is a slow reaction compared to most hydrocarbon oxidation reactions.

The pollutants commonly classified as VOC can encompass a wide spectrum of volatile organic compounds that are photoreactive in the atmosphere. VOC occur when some of the gas remains unburned or is only partially burned during the combustion process. With natural gas, some organics are carryover, unreacted, trace constituents of the gas, while others may be pyrolysis products of the heavier hydrocarbon constituents. Partially burned hydrocarbons result from poor air-to-fuel mixing prior to, or during, combustion, or incorrect air-to-fuel ratios in the cylinder during combustion due to maladjustment of the engine fuel system. Also, low cylinder temperature may yield partially burned hydrocarbons due to excessive cooling through the walls, or early cooling of the gases by expansion of the combustion volume caused by piston motion before combustion is completed.

3.2.3.3 Particulate Matter[4] -

PM emissions result from carryover of noncombustible trace constituents in the fuel and lubricating oil and from products of incomplete combustion. Emission of PM from natural gas-fired reciprocating engines are generally minimal and comprise fine filterable and condensible PM. Increased PM emissions may result from poor air-to-fuel mixing or maintenance problems.

3.2.3.4 Carbon Dioxide, Methane, and Nitrous Oxide[5] -

Carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O) are referred to as greenhouse gases. Such gases are largely transparent to incoming solar radiation; however, they absorb infrared radiation re-emitted by the Earth. Where available, emission factors for these pollutants are presented in the emission factors tables of this section.

3.2.4 Control Technologies

Three generic control techniques have been developed for reciprocating engines: parametric controls (timing and operating at a leaner air-to-fuel ratio); combustion modifications such as advanced engine design for new sources or major modification to existing sources (clean-burn cylinder head designs and prestratified charge combustion for rich-burn engines); and postcombustion catalytic controls installed on the engine exhaust system. Post-combustion catalytic technologies include selective catalytic reduction (SCR) for lean-burn engines, nonselective catalytic reduction (NSCR) for rich-burn engines, and CO oxidation catalysts for lean-burn engines.

3.2.4.1 Control Techniques for 4-Cycle Rich-burn Engines[4,6] -

Nonselective Catalytic Reduction (NSCR) -

This technique uses the residual hydrocarbons and CO in the rich-burn engine exhaust as a reducing agent for NO_x. In an NSCR, hydrocarbons and CO are oxidized by O_2 and NO_x. The excess hydrocarbons, CO, and NO_x pass over a catalyst (usually a noble metal such as platinum, rhodium, or palladium) that oxidizes the excess hydrocarbons and CO to H_2O and CO_2, while reducing NO_x to N_2. NO_x reduction efficiencies are usually greater than 90 percent, while CO reduction efficiencies are approximately 90 percent.

The NSCR technique is effectively limited to engines with normal exhaust oxygen levels of 4 percent or less. This includes 4-stroke rich-burn naturally aspirated engines and some 4-stroke rich-burn turbocharged engines. Engines operating with NSCR require tight air-to-fuel control to maintain high reduction effectiveness without high hydrocarbon emissions. To achieve effective NO_x reduction performance, the engine may need to be run with a richer fuel adjustment than normal. This exhaust excess oxygen level would probably be closer to 1 percent. Lean-burn engines could not be retrofitted with NSCR control because of the reduced exhaust temperatures.

Prestratified Charge -

Prestratified charge combustion is a retrofit system that is limited to 4-stroke carbureted natural gas engines. In this system, controlled amounts of air are introduced into the intake manifold in a specified sequence and quantity to create a fuel-rich and fuel-lean zone. This stratification provides both a fuel-rich ignition zone and rapid flame cooling in the fuel-lean zone, resulting in reduced formation of NO_x. A prestratified charge kit generally contains new intake manifolds, air hoses, filters, control valves, and a control system.

Table 3.2-2. UNCONTROLLED EMISSION FACTORS FOR 4-STROKE LEAN-BURN ENGINES[a]
(SCC 2-02-002-54)

Pollutant	Emission Factor (lb/MMBtu)[b] (fuel input)	Emission Factor Rating
Criteria Pollutants and Greenhouse Gases		
NO_x[c] 90 - 105% Load	4.08 E+00	B
NO_x[c] <90% Load	8.47 E-01	B
CO[c] 90 - 105% Load	3.17 E-01	C
CO[c] <90% Load	5.57 E-01	B
CO_2[d]	1.10 E+02	A
SO_2[e]	5.88 E-04	A
TOC[f]	1.47 E+00	A
Methane[g]	1.25 E+00	C
VOC[h]	1.18 E-01	C
PM10 (filterable)[i]	7.71 E-05	D
PM2.5 (filterable)[i]	7.71 E-05	D
PM Condensable[j]	9.91 E-03	D
Trace Organic Compounds		
1,1,2,2-Tetrachloroethane[k]	<4.00 E-05	E
1,1,2-Trichloroethane[k]	<3.18 E-05	E
1,1-Dichloroethane	<2.36 E-05	E
1,2,3-Trimethylbenzene	2.30 E-05	D
1,2,4-Trimethylbenzene	1.43 E-05	C
1,2-Dichloroethane	<2.36 E-05	E
1,2-Dichloropropane	<2.69 E-05	E
1,3,5-Trimethylbenzene	3.38 E-05	D
1,3-Butadiene[k]	2.67E-04	D
1,3-Dichloropropene[k]	<2.64 E-05	E
2-Methylnaphthalene[k]	3.32 E-05	C
2,2,4-Trimethylpentane[k]	2.50 E-04	C
Acenaphthene[k]	1.25 E-06	C

Supporting Information

	UNITED STATES ENVIRONMENTAL PROTECTION AGENCY **2016 MODEL YEAR** **CERTIFICATE OF CONFORMITY** **WITH THE CLEAN AIR ACT**	**OFFICE OF TRANSPORTATION** **AND AIR QUALITY** **ANN ARBOR, MICHIGAN 48105**

Certificate Issued To: Cummins Inc. (U.S. Manufacturer or Importer) **Certificate Number: GCEXB19.0ENA-013**	**Effective Date:** **10/23/2015** **Expiration Date:** **12/31/2016**	**Byron J. Bunker, Division Director** **Compliance Division**	**Issue Date:** **10/23/2015** **Revision Date:** **N/A**

Manufacturer: Cummins Inc.
Engine Family: GCEXB19.0ENA
Mobile/Stationary Certification Type: Stationary
Fuel : Natural Gas (CNG/LNG)
Emission Standards :
Part 60 Subpart JJJJ Table 1
NOx (g/Hp-hr) : 2
VOC (g/Hp-hr) : 1
CO (g/Hp-hr) : 4
Emergency Use Only : Y

Pursuant to Section 213 of the Clean Air Act (42 U.S.C. section 7547) and 40 CFR Part 60, 1065, 1068, and 60 (stationary only and combined stationary and mobile) and subject to the terms and conditions prescribed in those provisions, this certificate of conformity is hereby issued with respect to the test engines which have been found to conform to applicable requirements and which represent the following nonroad engines, by engine family, more fully described in the documentation required by 40 CFR Part 60 and produced in the stated model year.

This certificate of conformity covers only those new nonroad spark-ignition engines which conform in all material respects to the design specifications that applied to those engines described in the documentation required by 40 CFR Part 60 and which are produced during the model year stated on this certificate of the said manufacturer, as defined in 40 CFR Part 60. This certificate of conformity does not cover nonroad engines imported prior to the effective date of the certificate.

It is a term of this certificate that the manufacturer shall consent to all inspections described in 40 CFR 1068.20 and authorized in a warrant or court order. Failure to comply with the requirements of such a warrant or court order may lead to revocation or suspension of this certificate for reasons specified in 40 CFR Part 60. It is also a term of this certificate that this certificate may be revoked or suspended or rendered void *ab initio* for other reasons specified in 40 CFR Part 60.

This certificate does not cover large nonroad engines sold, offered for sale, or introduced, or delivered for introduction, into commerce in the U.S. prior to the effective date of the certificate.

Engine Emissions Data Cummins Inc Columbus, Indiana 47202-3005 http://www.cummins.com	Power Generation **KTA19G** **FR 4538**	530 hp (395 kWm) @ 1800 rpm 1546 lb-ft (2096 N-m) @ 1800 rpm		
		Configuration **D483008GX03**	CPL Code **3497**	Revision **25-Aug-14**

Compression Ratio:	**8.5:1**	Displacement:	**1150 cu. in. (19 L)**
Fuel System:	**Natural Gas**	Cylinders:	**6**
Combustion:	**Simple Lean Burn**	Bore x Stroke:	**6.25 x 6.25 in (159 x 159 mm)**
Emission Certification:	**2g/hp-hr NOx US EPA NSPS Factory Certified**	Aspiration:	**Turbocharged and Aftercooled**

Engine Speed	Standby Power		75% Load		50% Load	
rpm	hp	kWm	hp	kWm	hp	kWm
1,800	530	395	398	296	265	198

Exhaust Emissions Data @ 1800 rpm

	Standby Power			75% Load			50% Load		
Component	g/hp-hr	mg/nm³*	ppm	g/hp-hr	mg/nm³*	ppm	g/hp-hr	mg/nm³*	ppm
Total Hydrocarbons (Wet)	2.0	N/A	681	2.5	N/A	830	3.2	N/A	1029
Non Methane Hydrocarbons (Wet)	0.18	N/A	62	0.22	N/A	75	0.32	N/A	104
NOx (Dry)	1.5	N/A	227	1.5	N/A	228	1.5	N/A	223
CO (Dry)	1.5	N/A	386	1.5	N/A	381	1.6	N/A	402
CO2 (Dry)	462	N/A	N/A	474	N/A	N/A	514	N/A	N/A
HCHO	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
VOC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

O2 (Dry)	7.9%	7.6%	7.5%
BSFC	7881 BTU/hp-hr	8158 BTU/hp-hr	8744 BTU/hp-hr
Ignition timing (BTDC)	32°	32°	32°

* mg/nm³ is measured @ 5% O_2

Note: This emissions information is not meant to be referenced during engine commissioning or tuning. Please consult the relevant tuning procedure documents for emissions setpoint information.

Test Methods and Conditions:
Steady-State emissions recorded per ISO 8178-1 during operation at rated engine speed (+/- 2%) and stated constant load (+/- 2%) with engine temperatures, pressures and emission rates stabilized.

Fuel Specifications:
Dry processed natural gas fuel with 905 BTU per standard cubic foot lower heating value.

Reference Conditions:
25 °C (77 °F) Air Inlet Temperature, 99.5 kPa (29.39 in-Hg) Barometric Pressure [152 m (500 ft) altitude], and relative humidity of 50%.

Data was taken for a single engine test with the Test Method, Fuel Specification and Reference Conditions stated above. Field tests using alternate Test Methods, Fuel or Reference Conditions may yield different results.

Emissions Data Tolerances:
NOx - +/- 5%, Hydrocarbons - +/- 5%, CO - +/- 5%
CO2 - +/- 5%, O2 - +/- 5%

CHIEF ENGINEER: Kendra Eads (Application)
Lynn Zopff (Base Engine)

Gaseous Fuel Generator Set
KTA19G Engine Series

Specification Sheet
Model GFEB EPA SI NSPS Certified

NOTE: This engine is EPA SI NSPS certified and must be operated as outlined in the O&M manual.

Model GFEB Ratings	
Speed/Frequency	1800 rpm/60 Hz
Rating	Standby
Compression Ratio	8.5:1
Natural Gas Rating @ 0.8 P.F.*	350 kW (437 kVa)

NOTE: 54 °C (130 °F) or lower water temperature to the aftercooler.

* Per EPA SI NSPS, rating based on commercial pipeline natural gas.

All gases such as field, digester, and sewage gas will require an analysis of the specified gas and pre-approval from the factory. Consult your Cummins Distributor for details.

Description

The Cummins NPower GF-series commercial Generator Set (GenSet) is a fully integrated power generation system providing optimum performance, reliability, and versatility for stationary standby power applications.

A primary feature of the GF-series GenSet is strong motor-starting capability and fast recovery from transient load changes. The torque-matched system includes a heavy-duty Cummins 4-cycle spark-ignited engine, an AC alternator with high motor-starting kVA capacity, and an electronic voltage regulator with three-phase sensing for precise regulation under steady-state or transient loads. GFEB accepts 80% of the nameplate standby rating within ten seconds.

The standard PowerCommand® digital electronic control is an integrated system that combines engine and alternator controls for high reliability and optimum GenSet performance.

Optional GenSet housing and component heaters shield the GenSet from extreme operating conditions.* Environmental concerns are addressed by low exhaust emission engines, sound-attenuated housings, and exhaust silencers. A wide range of options, accessories, and services are available to allow configuration to your specific power generation needs.

Every production unit is factory tested at rated load and power factor. This testing includes demonstration of rated power and single-step rated load pickup.

Cummins NPower manufacturing facilities exemplify quality standards, emphasizing our commitment to high quality in the design, manufacture, and support of our products.

GenSets are designed, manufactured, and tested to relevant codes and standards listed below.

Features

Cummins Heavy-Duty Engine - Rugged 4-cycle industrial spark-ignited engine delivers reliable power, low emissions, and quick response to load changes.

UL 2200 Certification - This Cummins GenSet has been designed, tested, and certified to UL 2200 standards.

Alternator - Several alternator sizes offer selectable motor-starting capability with low reactance 2/3 pitch windings, low waveform distortion with non-linear loads, fault-clearing short-circuit capability, and class H insulation. The alternator electrical insulation system is UL1446 Listed. The alternator is certified to CSA 22.2 and UL 1004 Listed.

AmpSentry™ - A comprehensive monitoring and control system integral to the PowerCommand® Control System, AmpSentry™ guards the electrical integrity of the alternator and power system by providing protection against a wide array of fault conditions in the GenSet or in the load. AmpSentry™ may be utilized in lieu of a main line circuit breaker.

Control Systems - The PowerCommand® electronic control is standard equipment and provides total GenSet system integration, including automatic remote starting/stopping, precise voltage regulation, alarm and status message display, output metering, and auto-shutdown at fault detection. The PowerCommand® control is UL508 Listed, as well as NFPA 110 compliant in standalone applications. The controls are certified to CSA C282-M1999 and CSA 22.2 No.14 M91.

Warranty and Service - All Cummins NPower GenSets are backed by a comprehensive one-year warranty program and supported by a worldwide network of over 200 locations to assist with warranty, service, parts, and planned maintenance support.

* Cold weather heaters are recommended when ambient temperatures are below 0 °C (32 °F).

© 2015 | Cummins NPower LLC | Specifications subject to change without notice

NPower

Generator Set

The general specifications provide representative configuration details. Consult the outline drawing for actual installation design specifications.

Specifications - General	
Unit Width	1778 mm (71 in) Open set
Unit Height	2159 mm (86 in) Open set
Unit Length	3734 mm (149 in) Open set
Unit Wet Weight *	4010 to 4731 kg (8822 to 10408 lbs) - Dependent on selected alternator. Open set
Rated Speed	1800 rpm
Voltage Regulation, No Load to Full Load	±1%
Random Voltage Variation	±1% (Three phase only.)
Frequency Regulation	Isochronous
Random Frequency Variation	±0.5%
Radio Frequency Interference	Optional PMG excitation operates in compliance with BS800 and VDE level G and N. Addition of RFI protection kit allows operation per MIL-STD-461 and VDE level K.

* Weight does not include silencer, catalyst, batteries, circuit breakers, or optional equipment.

Rating Definitions

Standby Rating: Applicable for supplying emergency power for the duration of the utility power outage. No overload capability is available for this rating. Under no condition is an engine allowed to operate in parallel with the public utility at the Standby Power rating. This rating should be applied where reliable utility power is available. A Standby rated engine should be sized for a maximum of an 80% average load factor and 200 hours of operation per year. This includes less than 25 hours per year at the Standby Power rating. Standby ratings should never be applied except in true emergency power outages. Negotiated power outages contracted with a utility company are not considered an emergency. (AEB 26.02)

Site Derating Factors

This unit is rated for 38 °C (100 °F). See engine data sheet FR 4538 for altitude and ambient derate curves.

See GenSet enclosure specification sheet for other applicable derates.

Data represents gross engine performance capabilities obtained and corrected in accordance with SAEJ1349 conditions of 100 kPa (29.61 in. Hg) barometric pressure [110 m (361 ft.) altitude], 25 °C (77 °F) inlet air temperature, and 100 kPa (.34 in. Hg) water vapor pressure using dry processed natural gas fuel with 905 BTU per standard cubic foot (33.72 kJ/L) lower heating value. Deration may be required due to altitude, temperature, or type of fuel. Consult your local Cummins Distributor for details.

Electrical System Connection

Warning: Backfeed to a utility system can cause electrocution and/or property damage. Do not connect GenSets to any building electrical system except through an approved device or after the building main disconnect is open. Neutral connection must be bonded in accordance with National Electrical Code.

Fuel System

Standard Carburetor – IMPCO

Low Pressure Dry Processed Natural Gas – (905 BTU/ft.^{3} L.H.V.)

Running Pressure to Engine.....381 to 508 mm WC (15 to 20 in. WC)
Minimum Gas Supply Pipe Size @ Engine (NG).....50.8 mm (2.0 in.)
Gas Supply Filter Pressure Rating.....690 kPa (100psi)
The preceding pipe size is only a suggestion and piping may vary with temperature, distance from fuel supply, and application of local codes. Gas must be available at adequate volume and pressure for engine at the regulator.

The GenSet (engine) performance is based on processed natural gas fuel with 905 BTU per standard cubic foot (33.72 kJ/L) lower heating value. Variations in fuel composition and/or supply pressure must be eliminated during steady state operation. Locate the gas regulator as near to the engine as possible. Some systems may need an accumulator or other device(s) for startup or unstable conditions. Contact the fuel supply utility for details.

UL 2200-certified GenSets comply with NFPA 37 requirements, but do not include visual indication (provided by others, if required) on shutoff valves.

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Engine

Cummins heavy-duty spark-ignited engines use advanced combustion technology for reliable and stable power, low emissions, and fast response to sudden load changes. Electronic governing is standard for applications requiring constant (isochronous) frequency regulation such as Uninterruptible Power Supply (UPS) systems, non-linear loads, or sensitive electronic loads. Optional coolant heaters are recommended for all emergency standby installations or for any application requiring fast load acceptance after start-up.

Specifications - Engine

Base Engine	Cummins Model KTA19G
Displacement	19 L (1159 in^3)
Overspeed Limit	2100 rpm
Regenerative Power	18.1 kW
Cylinder Block Configuration	Cast iron with replaceable wet cylinder liners
Cranking Current	900 amps at ambient temperature of 0 °C (32 °F)
Battery Charging Alternator	43 amps
Battery Type	8D (x2)
Starting Voltage	24-volt, negative ground
Standard Cooling System	See derates on Page 2
Lube Oil Filter Types	Dual spin-on canisters-combination full flow with bypass

Fuel Consumption

STANDBY LOAD		1/4	1/2	3/4	Full
NG Rating	kW	87.5	175	263	350
Natural Gas	CFH	1310	2560	3587	4615
Propane Vapor	CFH	N/A	N/A	N/A	N/A
Propane Liquid	GPH	N/A	N/A	N/A	N/A

Cooling	Full Load	
Jacket Water Heat Rejection to Coolant	294 kW	(16720 BTU/min)
Aftercooler Heat Rejection to Coolant	110 kW	(6256 BTU/min)
Heat Rejection to Room	49 kW	(2787 BTU/min)
Jacket Water Coolant Capacity (w/radiator)	76 L	(20 USG)
Jacket Water Coolant Flow Rate	526 L/min	(137 GPM)
Aftercooler Coolant Capacity (w/radiator)	49 L	(13 USG)
Aftercooler Coolant Flow Rate	102 L/min	(27 GPM)
Jacket Water Max Coolant Friction Head	34 kPa	(5 psi)
Jacket Water Max Coolant Static Head	18.3 m	(60 ft)
Radiator Fan Load	26 kW	(35 hp)

Air	Full Load	
Combustion Air	575 L/sec	(1219 cfm)
Maximum Air Cleaner Restriction	381 mm H_2O	(15 in H_2O)
Alternator Cooling Air	990 L/sec	(2098 cfm)
Radiator Cooling Air	16576 L/sec	(35141 cfm)
Maximum Total External Restriction at Radiator (static)	12.7 mm H_2O	(0.5 in H_2O)

Exhaust	Full Load	
Gas Flow (Full Load)	1472 L/sec	(3121 cfm)
Maximum Gas Temperature - Dry Stack	697 °C	(1287 °F)
Total System Back Pressure Allowed	51 mm Hg	(2 in Hg)
Catalyst Back Pressure	N/A	N/A
Silencer Back Pressure (Factory Enclosed Units Only)	33.5 mm Hg	(1.32 in Hg)

Engine	Full Load	
Gross Engine Power Output	395 kWm	(529 hp)
BMEP @ Rated Load on NG	1395 kPa	(209 psi)
Piston Speed	9.53 m/sec	(1876 ft/min)
Oil Capacity	61 L	(16 USG)

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NPower

ENGINE SERVICE CONNECTIONS

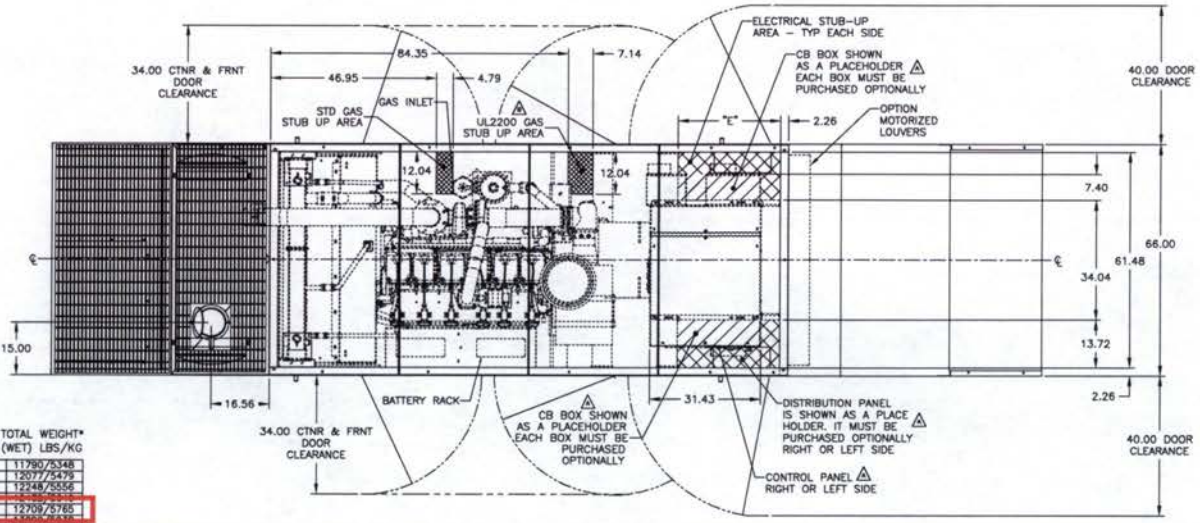
GAS INLET ----------2.00" NPT
ENGINE WATER IN ----------3.50" O.D.
ENGINE WATER OUT ---------3.00" O.D.
DE-AERATION ----------1/4" NPT
MAG PICK-UP ----------5/8-18 UNF
OIL DRAIN PLUG ---1_1/16-12 UN-2B ORING
EXHAUST STACK ----------5.00" 125#/150# ANSI FLANGE
AFTERCOOLER WATER IN -------1.25" O.D.
AFTERCOOLER WATER OUT ------1.25" O.D.
EXH TEMP COUPLING ---------1/4" NPT

FLUID CAPACITIES

ENGINE OIL ----------16 GAL △
ENGINE COOLANT ----------32 QTS
AFTERCOOLER COOLANT --------4 QTS
RAD JACKET WATER ----------12.20 GAL
RAD AFTERCOOLER ----------11.42 GAL

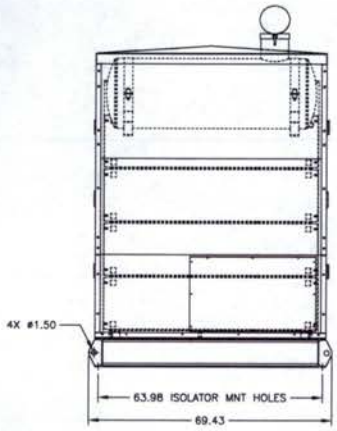
SERVICE NOTES

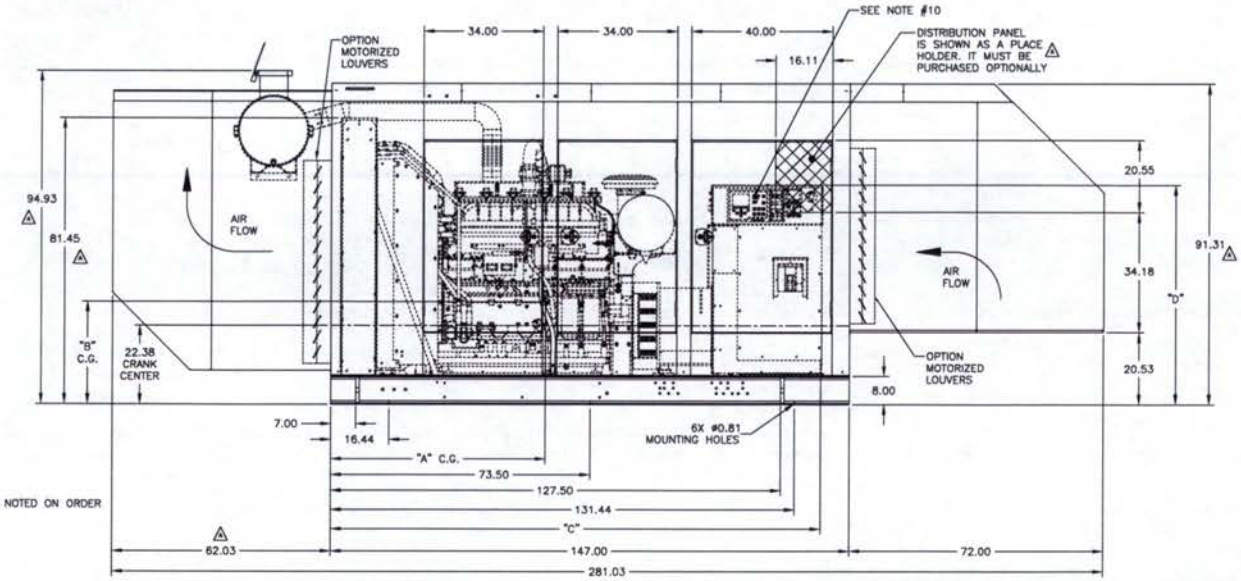
10.00 REQUIRED TO REMOVE OIL PAN
15.00 REQUIRED TO REMOVE OIL DIPSTICK
1.81 REQUIRED TO REMOVE OIL FILTER

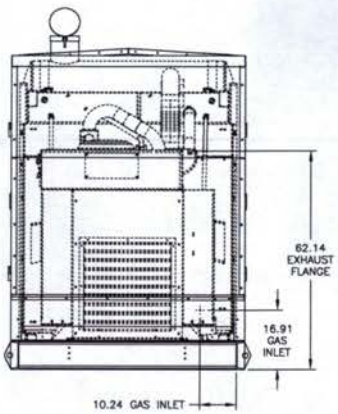


GENERATOR FRAME SIZE	DIM* "A"	DIM "B"	△ DIM "C"	△ DIM "D"	DIM "E"	TOTAL WEIGHT* (WET) LBS/KG
NEWAGE UCI274 K	62.21	29.00	139.03	62.45	32.75	11790/5348
NEWAGE HCI434 C	63.68	28.79	139.03	62.45	29.13	12077/5479
NEWAGE HCI434 D	64.59	28.67	139.03	62.45	29.13	12248/5556
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
NEWAGE HCI434 F	66.97	28.37	139.03	62.45	29.13	12709/5765
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
NEWAGE HCI534 D	68.73	28.15	139.03	62.45	24.89	13379/6068

*SEE NOTES 7, 8 AND 9







NOTES:
1) ENCLOSURE IS TO BE PAINTED ONAN GREEN UNLESS OTHERWISE NOTED ON ORDER
2) ALL HARDWARE TO BE STAINLESS STEEL
3) ALL DOORS KEYED ALIKE
4) STAINLESS STEEL LIFT-OFF DOOR HINGES
5) FOLDING T-HANDLE COMPOSITE DOOR LATCH
6) ENCLOSURE IS 14 GAUGE
7) ALL WEIGHTS AND DIMENSIONS ARE APPROXIMATE
8) WEIGHTS DO NOT INCLUDE BATTERIES OR OPTIONAL EQUIPMENT
9) WEIGHTS INCLUDE STANDARD CRITICAL GRADE EXHAUST. FOR HOSPITAL GRADE EXHAUST ADD 400 LBS/182 KG
10) CONTROLLER CAN BE MOUNTED ON EITHER SIDE OF CABINET
11) REQUIRES USE OF SPREADER BAR WHEN LIFTING TO PREVENT DAMAGE TO UNIT
12) GENSET DOES NOT INCLUDE FLOOR. CONTACT FACTORY FOR PRICING
13) GENSETS HAVE INTEGRAL ISOLATION

REV	ECO	DESCRIPTION OF REVISION	BY	DATE
B	2015-739	UPDATED COMPONENTS: GEN-HOUSING, CB'S & CONTROL ASSEMBLY TO UL2200 ADDED GAS STUB-UP REGION & NOTE FOR UL2200 OPTION	DJH	13NOV2015
A	2013-193	UPDATED ENCL HEIGHT & EXHAUST; ADDED CB/DIST PNL ZONES & NOTES; OIL CAPACITY: 16 GALLONS WAS 26 DIM B2.08 WAS 56.08	DJH	11APR2013

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UNLESS OTHERWISE SPECIFIED ALL DIMENSION TOLERANCES ARE
REGULAR DIMENSIONS ± 1 DECIMAL UNITS | METRIC UNITS
THIRD ANGLE PROJECTION
DWG UNITS: INCH/LB/S
SCALE: N/A
EST WEIGHT: N/A

Cummins Power
CUMMINS ONPOWER LLC
1400 KIMBERLY DRIVE
BAR BOWLE MOD
VOICE MAIL: 800-888-6626
WWW.CUMMINSONPOWER.COM

CUSTOM DESIGN AND OPTIT CENTER
2121 LAWRENCE
BLVD
DEPERE, WISCONSIN

ASSY,GENSET,KTA19SLB
LVL 1/LVL 2 ENCL,INT SILENCER

DRAWN BY:DVD | DATE:09JUL2010
AUTO CAD | INIT ECO: –
SHEET 1OF1 | DRAWING NO GFEB-03

A St
NTC EG approx location
Barrack Rd
Wabash Rd
© 2016 Google
Google earth
1991
Imagery Date: 11/1/2015 13 S 362535.93 m E 3874651.24 m N elev 5610 ft eye alt 7166 ft

Carnuel
40
Gibson Blvd SE
Eubank Gate
Hardin Dr
Pennsylvania St SE
Wyoming Blvd SE
NTC EG approx location
© 2016 Google
Google Earth
1991
Imagery Date: 11/1/2015 13 S 362800.99 m E 3875904.72 m N elev 5652 ft eye alt 38856 ft

Public Notice-Related Documentation

Pre-Permit Application Meeting Request Form

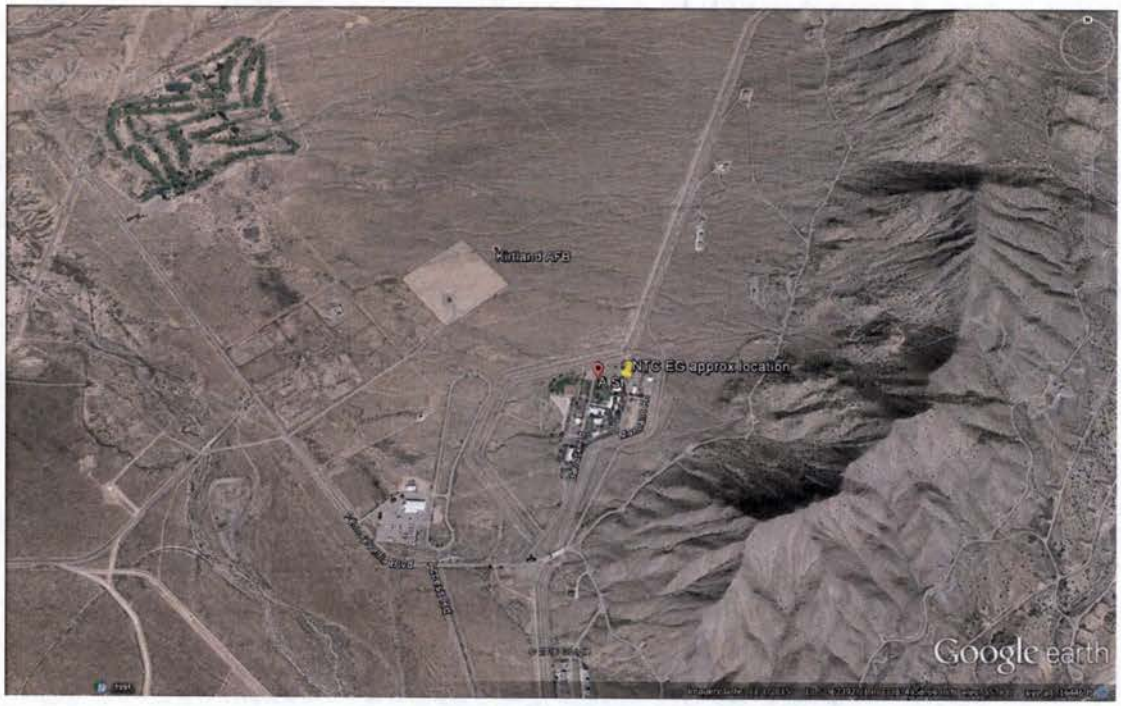
Air Quality Program- Environmental Health Department

Please complete appropriate boxes and email to aqd@cabq.gov or mail to:

Environmental Health Department
Air Quality Program
P.O. Box 1293
Room 3047
Albuquerque, NM 87103

Names: DOE National Training Center (NTC), Modification to Existing ATC Permit #3012	Upgrade existing 100 KW natural gas emergency generator to a 350 KW natural gas emergency generator
Company/Organization: DOE National Training Center/Chenega Support Services, LLC	
Point of Contact: Initially, Vern Hershberger, Trinity Consultants (later, E. Wayne Adams of DOE NTC): **Preferred form of contact (circle one):** Phone E-mail	Phone: 505-269-8343 Email: vhershberger@trinityconsultants.com
Preferred meeting date/times: Over the phone or email as required.	
Description of Project: The pending Construction Permit app. is for modification to existing permit ATC Permit #3012 proposing to upgrade the existing 100 KW emergency generator with a new 350 KW Cummins standby natural gas-fired emergency generator to back up commercial utility power for the DOE National Training Center (NTC) on the south east side of Kirtland Airforce Base. This facility is located near the intersection of A St SE. and Barrack Rd. SE, Albuquerque, NM 87117. Please refer to the Google Earth aerial pics and UTM coordinates in the application for the precise location.	

Google earth


Kirtland AFB
N/G EG approx location
Google earth

City of Albuquerque

Environmental Health Department
Air Quality Program

Pre-Permit Application Meeting Checklist

Any person seeking a permit under 20.11.41 NMAC, Authority-to-Construct Permits, shall do so by filing a written application with the Department. Prior to submitting an application, the applicant shall contact the department in writing and request a pre-application meeting for information regarding the contents of the application and the application process. This checklist is provided to aid the applicant and **a copy must be submitted with the application.**

Applications that are ruled incomplete because of missing information will delay any determination or the issuance of the permit. The Department reserves the right to request additional relevant information prior to ruling the application complete in accordance with 20.11.41 NMAC.

Name: DOE NTC/Chenega, Modification to Permit 3012 (Cummins Natural Gas-Fired Emergency Generator)
Contact: E. Wayne Adams, wadams@ntc.doe.gov, (505) 845-2067
Company/Business: Department of Energy National Training Center

☑ Fill out and submit a Pre-Permit Application Meeting Request form
⇒ Available online at http://www.cabq.gov/airquality
Submitted filled out form to AQP via email.

☑ Emission Factors and Control Efficiencies
Notes: NSPS Subpart JJJJ for NOx, VOC-NMHC, and CO for the new Cummins emergency natural gas-fired engine. SOx emissions based on 5 gr S/100 scf FERC limit for pipeline quality natural gas. PM emissions based on AP-42 emission factors. See cover letter and application form for further details.

☑ Air Dispersion modeling guidelines and protocol
Notes: NA, new standby emergency backup engine.

☑ Department Policies
Notes: Included the EPA Certificate of Conformity in permit app. in lieu of stack testing new Cummins emergency generator.

☑ Air quality permit fees
Notes: Based on 2016 Fee Checklist should be $1,904 for emissions <5 tpy. Paid with a Cummins check for that amount submitted with application.

Ver. 11/13

☑ Public notice requirements – will do and document before applying for Construction Permit.

- ☐ Replacement Part 41 Implementation
  - ☐ *20.11.41.*13 B. Applicant's public notice requirements
    - ☑ Providing public notice to neighborhood association/coalitions
      - Neighborhood associations:
        - Clayton Heights/Lomas Del Cielo
        - Elder Homestead Neighborhood Assoc.
        - Four Hills Village Home Owner Assoc.
        - Juan Tabo Hills Neighborhood Assoc.
        - Kirtland Community Assoc.
        - La Mesa Community Improvement Assoc.
        - Mirabella-Miravista Neighborhood Assoc.
        - Parkland Hills Neighborhood Assoc.
        - Siesta Hills Neighborhood Assoc.
        - Singing Arrow Neighborhood Assoc.
        - South Los Altos Neighborhood Assoc.
        - South San Pedro Neighborhood Assoc.
        - Southeast Heights Neighborhood Assoc.
        - Terracita Home Owner Assoc.
        - Trumbull Village Assoc.
        - University Heights Neighborhood Assoc.
        - Victory Hills Neighborhood Assoc.
        - Willow Wood Neighborhood Assoc.
        - Yale Village Neighborhood Assoc.
      - Coalitions:
        - District 6 Coalition of Neighborhood Associations
        - East Gateway Coalition

      Notes: KAFB AQ Office obtained list of neighborhood assn. and coalition rep. email addresses from AQP on 11/15/16.

    - ☑ Posting and maintaining a weather-proof sign

      Notes: Posted sign on-site on 11/22/16. See attached sign photos.

☑ Regulatory timelines

- 30 days to rule application complete
- 90 days to issue completed permit
- Additional time allotted if there is significant public interest and/or a significant air quality issue
  - Public Information Hearing
  - Complex permitting action

Notes:

City of Albuquerque- Environmental Health Department
Air Quality Program- Permitting Section
Phone: (505) 768-1972 Email: aqd@cabq.gov

Notice of Intent to Construct

Under 20.11.41.13B NMAC, the owner/operator is required to *provide public notice by certified mail or electronic mail to the designated representative(s) of the recognized neighborhood associations and recognized coalitions that are with-in one-half mile of the exterior boundaries of the property on which the source is or is proposed to be located* if they propose to construct or establish a new facility or make modifications to an existing facility that is subject to 20.11.41 NMAC – Construction Permits. **A copy of this form must be included with the application.**

Applicant's Name and Address: DOE National Training Center/Chenega Support Services

Owner / Operator's Name and Address: DOE National Training Center/Chenega Support Services Bldg. 30133, Barracks Rd. and A Street, KAFB, Albuquerque, NM 87117

Actual or Estimated Date the Application will be submitted to the Department: November-December 2016

Exact Location of the Source or Proposed Source: DOE National Training Center (NTC), Bldg. 30133, East of the intersection of A Street SE and Barrack Rd. SE, KAFB, Albuquerque, NM 87117

Description of the Source: Modification to Permit #3012 to upgrade the existing 100 KW emergency generator with a new natural gas-fired 350 KW emergency generator to provide backup electrical power to the DOE National Training Center (NTC) during rare PNM utility outages.

Nature of the Business: National Security/Department of Energy National Training Center

Process or Change for which the permit is requested: Upgrade existing emergency generator with the installation of a new Cummins emergency generator.

Preliminary Estimate of the Maximum Quantities of each regulated air contaminant the source will emit:

Initial ATC Permit #3012

	Pounds Per Hour (lbs/hr)	Tons Per Year (tpy)
CO	1.33	0.33
NOx	0.67	0.16
SO2	0.0008	0.0002
VOC	0.33	0.08
TSP	0.02	0.004
PM10	0.01	0.003
PM2.5	0.01	0.003
VHAP	N/A	N/A

Net Changes In Emissions

(Only for permit Modifications or Technical Revisions)

	lbs/hr	tpy	Estimated Total TPY
CO	+3.37	+0.14	0.47
NOx	+1.63	+0.070	0.23
SO2	+0.059	+0.0058	0.0060
VOC	+0.87	+0.040	0.12
TSP	+0.022	+0.00020	0.0042
PM10	+0.032	+0.0012	0.0042
PM2.5	+0.032	+0.0012	0.0042
VHAP	N/A	N/A	N/A

Maximum Operating Schedule: less than 200 hours per year for the new emergency generator.

Normal Operating Schedule: far less than 200 hours per year for the new emergency generator.

City of Albuquerque- Environmental Health Department
Air Quality Program- Permitting Section
Phone: (505) 768-1972 Email: aqd@cabq.gov

Current Contact Information for Comments and Inquires:

Name: E. Wayne Adams, Facilities Manager

Address: DOE National Training Center, PO Box 18041, Albuquerque, NM 87185

Phone Number: (505) 845-2067

E-Mail Address: wadams@ntc.doe.gov

If you have any comments about the construction or operation of the above facility, and you want your comments to be made as part of the permit review process, you must submit your comments in writing to the address below:

Environmental Health Manager

Stationary Source Permitting

Albuquerque Environmental Health Department

Air Quality Program

PO Box 1293

Albuquerque, New Mexico 87103

(505) 768-1972

Other comments and questions may be submitted verbally.

Please refer to the company name and facility name, as used in this notice or send a copy of this notice along with your comments, since the Department may not have received the permit application at the time of this notice. Please include a legible mailing address with your comments. Once the Department has performed a preliminary review of the application and its air quality impacts, if required, the Department's notice will be published in the legal section of the Albuquerque Journal and mailed to neighborhood associations and neighborhood coalitions near the facility location or near the facility proposed location.

Contact Group Name: Part 41 Notification List_15Aug16

Members:

Clayton Heights/Lomas Del Cielo Cabrera	Isabel_f_cabrera_617@msn.com
Clayton Heights/Lomas Del Cielo Molina-Dodge	e_molinadodge@yahoo.com
Distric 6 Coalition of NAs-Dennis	ginadennis@relerience.com
East Gateway Coalition-Hartman	nmpops@gmail.com
East Gateway Coalition-Mickelson	fhvharoger@aol.com
Elder Homestead NA-Marian Jordan	marianjor@aol.com
Four Hills Village HOA	4hhassoc@gmail.com
Four Hills Village HOA-Brian McKeever	brian4hvha@gmail.com
Juan Tabo Hills NA-Manring	Maureen.manring@yahoo.com
Juan Tabo Hills NA-Megen Blackburn	admin@jthna.com
Juan Tabo Hills NA-Walker	tyu@eridex.org
Kirtland Community Assoc-Elizabeth Aikin	bakieaikin@comcast.net
Kirtland Community Assoc-Kimberly Brown	kande0@yahoo.com
La Mesa Comm Improvement Assoc-Nancy Bearce	nancymbearce@gmail.com
La Mesa Community Improvement Assoc-Bennet	cb4innm@gmail.com
Mirabella-Miravista NA-David McGrogan	david.mcgrogan@gmail.com
Mirabella-Miravista NA-Laurie Estrada	Laudonest@gmail.com
Parkland Hills NA-Daniel Spanogle	danspanogle@gmail.com
Siesta Hills NA-Pete Stromberg	siesta2pete@gmail.com
Singing Arrow NA	info@abqsana.org
Singing Arrow NA-Davidson	dydavidson@msn.com
Singing Arrow-Mark Burton	mark@abqsana.org
South Los Altos NA-Allen Osborn	a.osborn06@comcast.net
South Los Altos NA-Eileen Jessen	eileentjessen@gmail.com
South San Pedro NA-Orozco-Geist	jgeist80@comcast.net
Southeast Heights NA-John Pate	jpate@molzencorbin.com
Southeast Heights NA-Miller	gmiller@mrwmla.com
Terracita HOA-Chase	jchase@cgres.com
Terracita HOA-Cheryl Peifer	cpeifer57@gmail.com
Trumbull Village Assoc-Barrs	gee@hotmail.com
Trumbull Village Assoc-Joanne Landry	landry54@msn.com
University Heights NA	info@uhanm.org
University Heights NA-Joe Gallegos	burquejoe2000@yahoo.com
University Heights NA-Julie Kidder	juliemkidder@gmail.com
Victory Hills NA-Patty Willson	info@willsonstudio.com
Victory Hills NA-Robert Stembridge	flathatcat@yahoo.com
Willow Wood NA-Frank Bushman	fbushman@arraytechinc.com
Willow Wood NA-Jonathan Hollinger	jrholl@gmail.com
Yale Village NA	yalevillage@comcast.net

Vern Hershberger

From:	Vern Hershberger
Sent:	Monday, November 21, 2016 7:02 PM
To:	'Isabel f cabrera'; 'molinadodge@vahoo.com'; 'ginadennis@relerience.com'; 'nmpops@gmail.com'; 'fhvharoger@aol.com'; 'marianjor@aol.com'
Cc:	'Kanack, Cale J.'; Eyerman, Regan V.; 'Wayne Adams'; 'Garrett Eldridge'; Milton Rosado
Subject:	RE: 20.11.41 NMAC required pre-permit application notice to neighborhood
Attachments:	DOE NTC NOI form ewa_v1.1.pdf

Dear Neighborhood Association/Coalition Representative,

The local air quality Construction Permit regulation 20.11.41 NMAC requires that registered representatives of neighborhood associations and coalitions within about a half mile of a facility proposing to apply for an air quality permit application be notified in advance of permit application. Therefore, you are receiving the required attached public notice regarding the Department of Energy (DOE) National Training Center's (NTC) proposed air quality permit modification application for a replacement new emergency generator to provide backup power during rare PNM electrical outages.

The DOE NTC facility is located inside Kirtland Air Force Base (KAFB) near the intersection of A Street SE and Barrack Rd. SE, Albuquerque, NM 87117. The NTC facility is located at a relatively remote area within KAFB approximately 2.5 miles from the nearest base fence-line.

Please see the attached *Notice of Intent to Construct* form for more information and directions if you might have related comments or questions.

Regards,

Vern Hershberger

Vern Hershberger, CHMM LEED AP | Senior Consultant | Trinity Consultants | 9400 Holly Blvd NE, Building 3, Suite 300 | Albuquerque, NM 87122 |

Vern Hershberger

From: Vern Hershberger
Sent: Monday, November 21, 2016 7:03 PM
To: '4hhassoc@gmail.com'; 'brian4hvha@gmail.com'; 'Maureen.manring@vahoo.com'; 'admin@ithna.com'; 'tyu@eridex.org'; 'akieaikin@comcast.net'; 'kandeO@vahoo.com'
Cc: 'Kanack, Cale J.'; Eyerman, Regan V.; 'Wayne Adams'; 'Garrett Eldridge'; Milton Rosado
Subject: RE: 20.11.41 NMAC required pre-permit application notice to neighborhood
Attachments: DOE NTC NOI form ewa_v1.1.pdf

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The DOE NTC facility is located inside Kirtland Air Force Base (KAFB) near the intersection of A Street SE and Barrack Rd. SE, Albuquerque, NM 87117. The NTC facility is located at a relatively remote area within KAFB approximately 2.5 miles from the nearest base fence-line.

Please see the attached *Notice of Intent to Construct* form for more information and directions if you might have related comments or questions.

Regards,

Vern Hershberger

Vern Hershberger, CHMM LEED AP | Senior Consultant | Trinity Consultants | 9400 Holly Blvd NE, Building 3, Suite 300 | Albuquerque, NM 87122 |

Trinity Consultants

Vern Hershberger

From: Vern Hershberger
Sent: Monday, November 21, 2016 7:09 PM
To: 'nancvmbearce@gmail.com'; 'cb4innm@gmail.com'; 'david.mcgrogan@gmail.com'; 'laudonest@gmail.com'; 'danspanogle@gmail.com'
Cc: 'Kanack, Cale J.'; Eyerman, Regan V.; 'Wayne Adams'; 'Garrett Eldridge'; Milton Rosado
Subject: RE: 20.11.41 NMAC required pre-permit application notice to neighborhood
Attachments: DOE NTC NOI form ewa_v1.1.pdf

Dear Neighborhood Association/Coalition Representative,

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The DOE NTC facility is located inside Kirtland Air Force Base (KAFB) near the intersection of A Street SE and Barrack Rd. SE, Albuquerque, NM 87117. The NTC facility is located at a relatively remote area within KAFB approximately 2.5 miles from the nearest base fence-line.

Please see the attached *Notice of Intent to Construct* form for more information and directions if you might have related comments or questions.

Regards,

Vern Hershberger

Vern Hershberger, CHMM LEED AP | Senior Consultant | Trinity Consultants | 9400 Holly Blvd NE, Building 3, Suite 300 | Albuquerque, NM 87122 |

Trinity Consultants

Vern Hershberger

From:	Vern Hershberger
Sent:	Monday, November 21, 2016 7:13 PM
To:	'siesta2pete@gmail.com'; 'info@abqsana.org'; 'dydavidson@msn.com'; 'mark@abgsana.org'; 'a.osborn06@comcast.net'; 'eileentjessen@gmail.com'; 'jgeist80 @comcast.net'; 'ipate@molzencorbin.com'; 'gmiller@mrwmla.com'
Cc:	'Kanack, Cale J.'; Eyerman, Regan V.; 'Wayne Adams'; 'Garrett Eldridge'; Milton Rosado
Subject:	RE: 20.11.41 NMAC required pre-permit application notice to neighborhood
Attachments:	DOE NTC NOI form ewa_v1.1.pdf

Dear Neighborhood Association/Coalition Representative,

The local air quality Construction Permit regulation 20.11.41 NMAC requires that registered representatives of neighborhood associations and coalitions within about a half mile of a facility proposing to apply for an air quality permit application be notified in advance of permit application. Therefore, you are receiving the required attached public notice regarding the Department of Energy (DOE) National Training Center's (NTC) proposed air quality permit modification application for a replacement new emergency generator to provide backup power during rare PNM electrical outages.

The DOE NTC facility is located inside Kirtland Air Force Base (KAFB) near the intersection of A Street SE and Barrack Rd. SE, Albuquerque, NM 87117. The NTC facility is located at a relatively remote area within KAFB approximately 2.5 miles from the nearest base fence-line.

Please see the attached *Notice of Intent to Construct* form for more information and directions if you might have related comments or questions.

Regards,

Vern Hershberger

Vern Hershberger, CHMM LEED AP | Senior Consultant | Trinity Consultants | 9400 Holly Blvd NE, Building 3, Suite 300 | Albuquerque, NM 87122 |

Trinity Consultants

Vern Hershberger

From:	Vern Hershberger
Sent:	Monday, November 21, 2016 7:22 PM
To:	'ichase@cgres.com'; 'cpeifer57@gmail.com'; 'gee@hotmail.com'; 'landry54@msn.com'; 'info@uhanm.org'; 'burguejoe2000@yahoo.com'; 'juliemkidder@gmail.com'
Cc:	'Kanack, Cale J.'; Eyerman, Regan V.; 'Wayne Adams'; 'Garrett Eldridge'; Milton Rosado
Subject:	RE: 20.11.41 NMAC required pre-permit application notice to neighborhood
Attachments:	DOE NTC NOI form ewa_v1.1.pdf

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Regards,

Vern Hershberger

Vern Hershberger, CHMM LEED AP | Senior Consultant | Trinity Consultants | 9400 Holly Blvd NE, Building 3, Suite 300 | Albuquerque, NM 87122 |

Trinity Consultants

Vern Hershberger

From:	Vern Hershberger
Sent:	Monday, November 21, 2016 7:25 PM
To:	'info@willsonstudio.com'; 'flathatcat@yahoo.com'; 'fbushman@arraytechinc.com'; 'jrholl@gmail.com'; 'yalevillage@comcast.net'
Cc:	'Kanack, Cale J.'; Eyerman, Regan V.; 'Wayne Adams'; 'Garrett Eldridge'; Milton Rosado
Subject:	RE: 20.11.41 NMAC required pre-permit application notice to neighborhood
Attachments:	DOE NTC NOI form ewa_v1.1.pdf

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Vern Hershberger

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Trinity Consultants

City of Albuquerque

Environmental Health Department
Air Quality Program

Public Notice Sign Guidelines

Any person seeking a permit under 20.11.41 NMAC, Authority-to-Construct Permits, shall do so by filing a written application with the Department. *Prior to submitting an application, the applicant shall post and maintain a weather-proof sign provided by the department. The applicant shall keep the sign posted until the department takes final action on the permit application; if an applicant can establish to the department's satisfaction that the applicant is prohibited by law from posting, at either location required, the department may waive the posting requirement and may impose different notification requirements.* **A copy of this form must be submitted with your application.**

Applications that are ruled incomplete because of missing information will delay any determination or the issuance of the permit. The Department reserves the right to request additional relevant information prior to ruling the application complete in accordance with 20.11.41 NMAC.

Name: DOE NTC/Chenega, Modification to Permit 3012 (Cummins Natural Gas-Fired Emergency Generator)
Contact: E. Wayne Adams, wadams@ntc.doe.gov, (505)845-2067
Company/Business: DOE National Training Center, Bldg. 30133 Barracks Rd. & A Street, KAFB, Albuquerque, NM 87117

☐ ☑ The sign must be posted at the more visible of either the proposed or existing facility entrance (or, if approved in advance and in writing by the department, at another location on the property that is accessible to the public)

- ☐ ☑ The sign shall be installed and maintained in a condition such that members of the public can easily view, access, and read the sign at all times.
- ☐ ☑ The lower edge of the sign board should be mounted a minimum of 2' above the existing ground surface to facilitate ease of viewing

☐ ☑ Attach a picture of the completed, properly posted sign to this document

☐ ☐ **Check here if the department has waived the sign posting requirement.**
Alternative public notice details:

Ver. 11/13

PROPOSED AIR QUALITY CONSTRUCTION PERMIT

15
MPH