ARCADIS

Infrastructure · Water · Environment · Buildings

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Air Quality Management
Delaware Department of Natural Resources of Environmental Control
Blue Hen Corporate Center
655 S. Bay Road
Suite 5N
Dover, DE 19901

FEDERAL EXPRESS

Subject:
Application to Construct and Initial Notification
Comcast of New Castle County, LLC
2215 N. N. DuPont Highway
New Castle, Delaware
Facility ID Number: 1000300634

Date:
August 19, 2013

To Whom It May Concern:

On behalf of Comcast of New Castle County, LLC (Comcast), ARCADIS U.S., Inc. (ARCADIS) is hereby submitting two (2) Applications to Construct and two (2) Initial Notifications for stand-by generators that will be installed at the above referenced New Castle, Delaware facility. Pursuant to Delaware Department of Natural Resources of Environmental Control (DNREC) requirements, stand-by generators with a power output equal to or greater than 450 kW are required to submit Applications to Construct and Initial Notifications to the agency.

Email:
bridget.antczak@arcadis-us.com

Our ref:
BN024612.0000.00001

Based upon correspondence with Mr. Mark Prettyman of the DNREC Division of Air Quality the following items are enclosed:

- Two (2) complete Applications to Construct, Operate or Modify Stationary Sources, including Forms AQM-1, AQM-2, AQM-3.3, and AQM-5
- Manufacturer Specification Sheets, including EPA Certificates of Conformity for the Engines
- Emissions Calculations for Criteria Pollutants and applicable HAPs - based upon EPA guidance, potential emissions from the emergency generators are based upon 500 hours of operations per year
- Two (2) complete Initial Notifications (one per generator)
- Four (4) checks made out to the "State of Delaware" – two $215 checks for the permit fees associated with the applications and two $165 checks for the advertisement fees associated with each application

The generators are 1,000 kW Cummins Power DQFAD. The engines are rated for 1,490 horsepower when operating in stand-by rating. The 2013 model year engines satisfy EPA Tier 3 emission requirements for off-road engines. The engines will be installed on October 25, 2013.

As these are stand-by generators, they will regularly operate for maintenance and testing purposes. The units are expected to run not more than 52 hours per year (one hour per week) for maintenance and testing purposes. The generators are equipped with totalizing hour meters on the engines, to record actual hours of usage. In addition, usage records are maintained at the facility.

Since the engines were manufactured after April 1, 2006, they are applicable to 40 CFR 60 Subpart IIII (New Source Performance Standards for Stationary Compression Ignition Internal Combustion Engines). The engines will comply with the standard by using diesel fuel with a sulfur content less than 15 ppm and maintaining a log of all usages.

Once the two (2) 1,000 kW generators have been installed, the facilities existing emergency generators (permitted under APC-2003/0275, APC-2002/0712, and APC-2011/0025) will be taken out of service.

If you have any questions or concerns regarding this application, please contact me at 908.685.7841 or via e-mail at bridget.antczak@arcadis-us.com.

Sincerely,

Bridget H. Antczak
Certified Project Manager

BHA/ymt
Enclosure

Copies:
Richard Raines – Comcast (e-mail only)
Chris Cosby – Comcast (e-mail only)
Eddy Rodriguez – Maicom (e-mail only)

DNREC – Air Quality Management Section
Application to Construct, Operate, or Modify Stationary Sources

Administrative Information

If you are using this form electronically, press F1 at any time for help
All Application Forms Should Be Mailed To:
Air Quality Management
Blue Hen Corporate Center
655 S. Bay Road, Suite 5 N
Dover, DE 19901

All Checks Should Be Made Payable To:
State of Delaware

For Department Use Only

Date Received Stamp: RECEIVED AUG 20 2013 6013 AIR QUALITY MGT.

Assigned Permit Number: APC-2014/0010-C

Company and Site Information

1.	Company Name: **Comcast of New Castle County, LLC**		
2.	Company Mailing Address: **2215 N. DuPont Highway**		
	City: **New Castle**	State: **DE**	Zip Code: **19720**
3.	Site Name: **New Castle Headend**		
4.	Site Mailing Address: *(if different from above)*		
	City:	State:	Zip Code:
5.	Physical Location of Site: **2215 N. DuPont Highway** *(if different from above)*		
	City: **New Castle**	State: **DE**	Zip Code: **19720**
6.	Air Quality Management Facility ID Number: **1000300634**		
7.	Site NAICS Code): **515210** *(list all that apply*		
8.	Site SIC Code: : **4841** *(list all that apply)*		
9.	Site Location Coordinates: **39.70177, -75.57156**		
10.	Is the Facility New or Existing? ☐ NEW ☒ EXISTING		
If the Facility is an Existing Facility, Complete the Rest of Question 10. If Not, Proceed to Question 11.			
10.1.	Does the Facility Have Active Air Permits? ☒ YES ☐ NO		

Company and Site Information

11. Is this Application For a New Source or Modification of an Existing Source?
☒ New Source
☐ Modification of Existing Source
☐ Other (Specify):

If the application is for the modification of an existing source, complete the rest of Question 11. If not, proceed to Question 12.

11.1. Does the Source Have an Active Air Permit? ☐ YES ☐ NO

If the source has an active air permit, complete the rest of Question 11. If not, proceed to Question 12.

11.2. Permit Number of Existing Source:

12. Status of Source Being Applied For: ☒ Natural Minor Source ☐ Synthetic Minor Source ☐ Major Source

13. Facility Status: ☒ Natural Minor Facility ☐ Synthetic Minor Facility ☐ Major Facility

If the source is a Major Source, complete the rest of Question 13. If not, proceed to Question 14.

13.1. Responsible Official Name: **Richard Raines**

13.2. Responsible Official Title: **Facility Manager**

Contact Information

14. Name of Owner or Facility Manager: **Richard Raines**

15. Title of Owner or Facility Manager: **Facility Manager**

16. Permit Contact Name: **Richard Raines**

17. Permit Contact Title: **Facility Manager**

18. Permit Contact Telephone Number: **(484) 302-9410**

19. Permit Contact Fax Number:

20. Permit Contact E-Mail Address: **Richard_Raines@cable.comcast.com**

Proposed Operating Schedule

21. Proposed Operating Schedule: **24** hours/day **7** days/week **52** weeks/year

21.1. Is There Any Additional Information Regarding the Operating Schedule? ☒ YES ☐ NO

If YES, complete the rest of Question 21. If NO, proceed to Question 22.

21.2. Describe the Additional Information: **This application is for an emergency generator. The generator will operate one (1) hour per week for testing and maintenance and during emergenices that cause the facility to lose power.**

Coastal Zone Information

22. Is the Facility Located in the Coastal Zone? ☒ YES ☐ NO

If the facility is located in the Coastal Zone complete the rest of Question 22. If not, proceed to Question 23.

22.1. Is a Coastal Zone Permit Required for Construction or Operation of the Source Being Applied for? ☐ YES ☒ NO

Attach a copy of the Coastal Zone Determination if it has not been previously submitted

If a Coastal Zone Permit is required complete the rest of Question 22. If not, proceed to Question 23.

22.2. Has a Coastal Zone Permit Been Issued? ☐ YES ☐ NO

Attach a copy of the Coastal Zone Permit if it has not been previously submitted

Local Zoning Information

23. Parcel Zoning: **Industrial**

Attach Proof of Local Zoning if it has not been previously submitted

Application Information

24. Is the Appropriate Application Fee Attached? ☒ YES ☐ NO

25. Is the Advertising Fee Attached? ☒ YES ☐ NO

Attach the appropriate fees. Note that your Application will not be considered complete if the appropriate fees are not included.

26. Is a Cover Letter Describing the Process Attached? ☒ YES ☐ NO

Attach a brief cover letter describing your Application.

If the Facility is a New Facility complete Question 27. If not, proceed to Question 28.

27. Is a Copy of the Applicant Background Information Questionnaire on Record at the Department? ☐ YES ☐ NO

If NO, complete the rest of Question 27. If YES, process to Question 28.

27.1 Is a Copy of the Applicant Background Information Questionnaire Attached? ☐ YES ☐ NO

Attach a copy of the Applicant Background Information Questionnaire if applicable.

28. Check Which Application Forms are Attached:

☒ AQM-1	☐ AQM-3.4	☐ AQM-3.9	☐ AQM-3.14	☐ AQM-4.4	☐ AQM-4.9	☐ AQM-6
☒ AQM-2	☐ AQM-3.5	☐ AQM-3.10	☐ AQM-3.15	☐ AQM-4.5	☐ AQM-4.10	
☐ AQM-3.1	☐ AQM-3.6	☐ AQM-3.11	☐ AQM-4.1	☐ AQM-4.6	☐ AQM-4.11	
☐ AQM-3.2	☐ AQM-3.7	☐ AQM-3.12	☐ AQM-4.2	☐ AQM-4.7	☐ AQM-4.12	
☒ AQM-3.3	☐ AQM-3.8	☐ AQM-3.13	☐ AQM-4.3	☐ AQM-4.8	☒ AQM-5	

Application Information

29. Check Which Documents are Attached:

- ☐ Coastal Zone Determination
- ☐ Coastal Zone Permit
- ☐ Proof of Local Zoning
- ☒ Application Fee
- ☒ Advertising Fee
- ☐ Applicant Background Information Questionnaire
- ☐ Claim of Confidentiality
- ☒ Manufacturer Specification(s)
- ☐ Material Safety Data Sheets (MSDSs)
- ☒ Supporting Calculations
- ☒ Descriptive Cover Letter
- ☒ Other (Specify): **Stationary Generator Intial Notifcation**

Confidentiality Information

30. Do You Consider Any of the Information Submitted With this Application Confidential? ☐ YES ☒ NO

If a Claim of Confidentiality is made it MUST meet the requirements of Section 6 of DNREC's Freedom of Information ("FOIA") Regulation at the time the Application is submitted.

Signature Block

I, the undersigned, hereby certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all of its attachments as to the truth, accuracy, and completeness of this information. I certify based on information and belief formed after reasonable inquiry, the statements and information in this document are true, accurate, and complete. By signing this form, I certify that I have not changed, altered, or deleted any portions of this application. I acknowledge that I cannot commence construction, alteration, modification or initiate operation until I receive written approval (i.e. permit, registration, or exemption letter) from the Department. I acknowledge that I may be required to perform testing of the equipment to receive construction or operation approval, and that if I do not receive approval to construct or operate that I may appeal the decision.

Richard Raines
Owner or Authorized Agent

8-15-13
Date

Signature of Owner or Authorized Agent

All Application Forms Should Be Mailed To:
Air Quality Management
Blue Hen Corporate Center
655 S. Bay Road, Suite 5 N
Dover, Delaware 19901

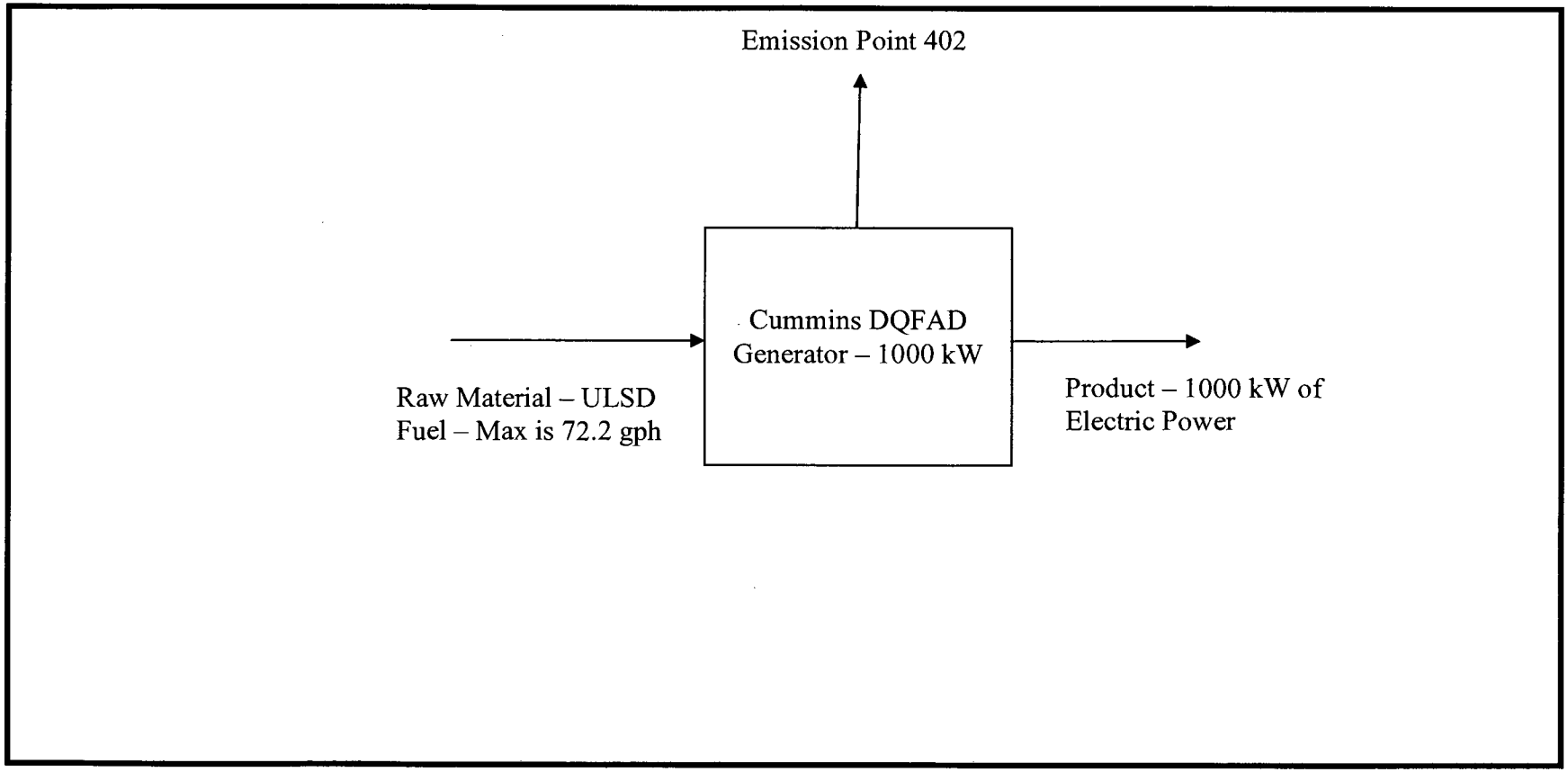
All Checks Should Be Made Payable To:
State of Delaware

DNREC – Air Quality Management Section
Application to Construct, Operate, or Modify Stationary Sources

Form AQM-2
Page 1 of 1

Process Flow Diagram

Sketch the Process Flow Diagram for the equipment or process being applied for. Include each emission unit and control device (even existing emission units that will not be modified by this application). You may identify each emission unit with a simple shape. Label each emission unit and control device with a unique identifier. Show the relationship between each emission unit and/or control device by drawing arrows between them to indicate the flow of air pollutants. List which application forms are included for each emission unit or control device below the shape representing each emission unit or control device . See http://www.delaware.gov/reg2/default.htm for example Process Flow Diagrams for common processes. If you already have a Process Flow Diagram for the equipment or process being applied for, you may attach it to the application instead of using this form.



DNREC – Air Quality Management Section
Application to Construct, Operate, or Modify Stationary Sources

Generator/Engine Application

If you are using this form electronically, press F1 at any time for help

General Information

1.	Facility Name: **Comcast - New Castle Headend**
2.	Equipment ID: **402**
3.	Manufacturer: **Cummins Power**
4.	Model: **DQFAD**
5.	Serial Number: **To Be Determined**
6.	Rated Heat Input: **9.89** MMBTU/hour
7.	Maximum Power Output: **1490 horsepower**
8.	Date of Manufacture: **To Be Determined**
9.	Installation Date: **October 1, 2013 (estimate)**
10.	Is the Equipment Being Applied For a Generator or an Engine? ☒ Generator ☐ Engine
If the equipment is a Generator, complete the rest of Question 10. If not, proceed to Question 11.	
10.1.	Is the Generator Existing or New? ☐ Existing ☒ New
10.2.	Will the Generator Be Classified as an Emergency Generator or a Distributed Generator? ☒ Emergency ☐ Distributed
10.3.	Has an Initial Notification Pursuant to 7 **DE Admin. Code** 1144 Been Submitted for this Generator? ☐ YES ☒ NO
If NO, include a copy of the Initial Notification with this application.	
10.4.	Have the Emissions From the Generator Been Certified to Meet the Currently Applicable US EPA Non-Road Emission Standards? ☒ YES ☐ NO
If YES, attach a copy of the Manufacturer's Certification. If NO, attach copies of any/all of the following: any maintenance or operating requirements/instructions provided by the generator manufacturer; the type, or a description, of any emission control equipment use; and/or emissions test data for the generator (such as a manufacturer's technical data sheet), any supporting documentation for any emission control equipment used, any supporting calculations, any quality control or assurance information, and any other information needed to demonstrate compliance with the requirements. Proceed to Question 11.	
11.	Primary Fuel: ☐ Natural Gas ☒ Diesel ☐ Propane ☐ Biodiesel ☐ Other (specify):
11.1.	Maximum Annual Primary Fuel Consumption: **36,100 (based on 500 hrs/yr) gal**
11.2.	Heat Content of Primary Fuel: **137,000 BTU/gal**
11.3.	Maximum Firing Rate: **72.2 gallons/hr**
11.4.	Percent Sulfur of Primary Fuel: **0.0015** %
11.5.	Percent Ash of Primary Fuel: **0** %

General Information

12. Secondary Fuel: ☐ Natural Gas ☐ Biodiesel ☐ Diesel ☐ Other (specify): ☐ Propane

12.1. Maximum Annual Secondary Fuel Consumption: **MMCF**

12.2. Heat Content of Secondary Fuel: **BTU/CF**

12.3. Maximum Firing Rate: **MMCF/hr**

12.4. Percent Sulfur of Secondary Fuel: %

12.5. Percent Ash of Secondary Fuel: %

Stack Information

13. How Does the Process Equipment Vent:
(check all that apply)
☒ Directly to the Atmosphere
☐ Through a Control Device Covered by Forms AQM-4.1 through 4.12

If any of the process equipment vents directly to the atmosphere proceed to Question 14. If the process equipment vents through a control device, provide the stack parameters on the control device form and proceed to Question 15.

14. Emission Point Name: **1000 kW Generator #2 Em Pt 402**

14.1. Stack Height Above Grade: **12.4 feet**

14.2. Stack Exit Diameter: **0.83 feet**
(Provide Stack Dimensions If Rectangular Stack)

14.3. Is a Stack Cap Present? ☒ YES ☐ NO

14.4. Stack Configuration: ☒ Vertical ☐ Horizontal ☐ Downward-Venting
(check all that apply) ☐ Other (Specify):

14.5. Stack Exit Gas Temperature: **890 °F**

14.6. Stack Exit Gas Flow Rate: **7540 ACFM**

14.7. Distance to Nearest Property Line: **75 ft**

14.8. Describe Nearest Obstruction: **Building**

14.9. Height of Nearest Obstruction: **17 ft**

14.10. Distance to Nearest Obstruction: **45 ft**

14.11. Are Stack Sampling Ports Provided? ☐ YES ☒ NO

Monitoring Information

15. Will Emissions Data be Recorded by a Continuous Emission Monitoring System? ☐ YES ☒ NO

If Yes, Attach a Copy of the Continuous Emission Monitoring System Manufacturer's Specification Sheets

If YES, complete the rest of Question 15. If NO, proceed to Question 16.

Monitoring Information

15.1. Pollutants Monitored: ☐ VOCs ☐ HAPs ☐ PM ☐ PM_{10} ☐ $PM_{2.5}$ ☐ NO_X ☐ SO_X ☐ Metals ☐ Other (Specify):

15.2. Describe the Continuous Emission Monitoring System:

15.3. Manufacturer:

15.4. Model:

15.5. Serial Number:

15.6. Will Multiple Emission Units Be Monitored at the Same Point? ☐ YES ☐ NO

If YES, complete the rest of Question 15. If NO, proceed to Question 16.

15.7. Emission Units Monitored:

15.8. Will More Than One Emission Unit be Emitting From the Combined Point At Any Time? ☐ YES ☐ NO

If YES, complete the rest of Question 15. If NO, proceed to Question 16.

15.9. Emission Units Emitting Simultaneously:

Visible Emissions Monitoring Information

For Primary Fuel

16. Proposed Technique Used to Monitor Visible Emissions:
☐ Opacity Monitor (COM)
☐ Manual (Method 9)
☐ Manual (Method 22)
☒ Other (Describe): **5 minute observation**

If an Opacity Monitor (COM) is used, complete the rest of Question 16. If not, proceed to Question 17.

16.1. Describe the Continuous Opacity Monitoring System:

16.2. Manufacturer:

16.3. Model:

16.4. Serial Number:

17. Proposed Frequency of Opacity Monitoring: **Quarterly, results will be logged**

For Secondary Fuel. If no Secondary Fuel is used, proceed to Question 20.

18. Proposed Technique Used to Monitor Visible Emissions:
☐ Opacity Monitor (COMs)
☐ Manual (Method 9)
☐ Manual (Method 22)
☐ Other (Describe):

If an Opacity Monitor (COMs) is used, complete the rest of Question 18. If not, proceed to Question 19.

18.1. Describe the Continuous Opacity Monitoring System:

18.2. Manufacturer:

18.3. Model:

Visible Emissions Monitoring Information

18.4. Serial Number:

19. Proposed Frequency of Opacity Monitoring:

Monitoring and Alarm Information

20. Are There Any Alarms You Would Like the Department to Consider When Drafting the Permit? ☐ YES ☒ NO

If YES, complete the rest of Question 20. If NO, proceed to Question 21.

20.1. Describe the System Alarm(s):

If there are more than five alarms, attach additional copies of this page as needed.

	Operating Parameter Monitored	Describe Alarm Trigger	Monitoring Device or Alarm Type	Does the Alarm Initiate an Automated Response?
20.1.1.			☐ Visual ☐ Auditory ☐ Automatic (Remote Monitoring) ☐ Other	☐ NO ☐ YES Describe:
20.1.2.			☐ Visual ☐ Auditory ☐ Automatic (Remote Monitoring) ☐ Other	☐ NO ☐ YES Describe:
20.1.3.			☐ Visual ☐ Auditory ☐ Automatic (Remote Monitoring) ☐ Other	☐ NO ☐ YES Describe:
20.1.4.			☐ Visual ☐ Auditory ☐ Automatic (Remote Monitoring) ☐ Other	☐ NO ☐ YES Describe:
20.1.5.			☐ Visual ☐ Auditory ☐ Automatic (Remote Monitoring) ☐ Other	☐ NO ☐ YES Describe:

Emissions Information

21. Do You Plan to Take Any Emission Limitations to Avoid Major Source Status, Minor New Source Review, MACT, NSPS, etc.? ☐ YES ☒ NO

If YES, complete the rest of Question 21. If NO, proceed to Question 22.

Emissions Information

21.1. Describe Any Proposed Emission Limitations:

Operating Information

22. Do You Plan to Take Any Operating Limitations to Avoid Major Source Status, Minor New Source Review, MACT, NSPS, etc.? ☐ YES ☒ NO

If YES, complete the rest of Question 22. If NO, proceed to Question 23.

22.1. Describe Any Proposed Operating Limitations:

Additional Information

23. Is There Any Additional Information Pertinent to this Application? ☒ YES ☐ NO

If YES, complete the rest of Question 23.

23.1. Describe: **The 2013 model year engine satisfies Tier 2 emission requirements. The generator will only be used to provide stand-by electrical power to avoid an interruption in operations. As this is a stand-by generator, it will regularly operate for testing and maintenance purposes. The generator is equipped with a totalizing meter on the engine, to record actual hours of usage. In addition, usage records will be maintained at the facility. Since the engine was manufactured after April 1, 2006, it is applicable to 40 CFR 60 Subpart IIII (NSPS for Stationary Compression Ignition Internal Combustion Engines). The engine will comply with the standard by using diesel fuel with a sulfur content less than 15 ppm and logging all uses of the generator.**

Emissions Information Application

If you are using this form electronically, press F1 at any time for help

Process Information	
1.	Number of Individual Pieces of Process Equipment in Process: **1**
2.	Number of Individual Control Devices in Process: **0**

Emissions Information for First Emission Point/Stack

3. Emission Point Name: **1000 kW Generator #2**

4. Equipment ID Number for all Process Equipment and Control Devices Venting Through Emission Point/Stack: **402**

5. Pollutant Emissions

If more than 18 pollutants are emitted at this Emission Point/Stack, attach additional copies of this page as needed.

	Pollutant Name (Specify VOCs and HAPs Individually in 5.10 through 5.18)	CAS Number (Not required for 5.1 through 5.9)	Maximum Uncontrolled Emission Rate at Design Capacity	Maximum Controlled Emission Rate at Design Capacity	Annual Potential to Emit (PTE)	Expected Annual Emissions
5.1.	Particulate Matter (PM)		**0.492 lbs/hour**	**lbs/hour**	**0.123** tons/year	**0.013** tons/year
5.2.	PM_{10}		**0.492 lbs/hour**	**lbs/hour**	**0.123** tons/year	**0.013** tons/year
5.3.	$PM_{2.5}$		**0.492 lbs/hour**	**lbs/hour**	**0.123** tons/year	**0.013** tons/year
5.4.	Sulfur Oxides (SO_X)		**0.018 lbs/hour**	**lbs/hour**	**0.005** tons/year	**0.000** tons/year
5.5.	Nitrogen Oxides (NO_X)		**15.75 lbs/hour**	**lbs/hour**	**3.938** tons/year	**0.410** tons/year
5.6.	Carbon Monoxide (CO)		**8.53 lbs/hour**	**lbs/hour**	**2.133** tons/year	**0.222** tons/year
5.7.	Lead		**NA lbs/hour**	**lbs/hour**	**NA** tons/year	**NA** tons/year
5.8.	Total Volatile Organic Compounds (VOCs)		**15.75 lbs/hour**	**lbs/hour**	**3.938** tons/year	**0.410** tons/year

Emissions Information for First Emission Point/Stack						
5.9.	Total Hazardous Air Pollutants (HAPs)		**0.0148 lbs/hour**	**lbs/hour**	**0.0037** tons/year	**0.0004** tons/year
5.10.	**Benzene**	**71-43-2**	**0.0077 lbs/hour**	**lbs/hour**	**0.0019** tons/year	**0.0002** tons/year
5.11.	**Toluene**	**108-88-3**	**0.0028 lbs/hour**	**lbs/hour**	**0.0007** tons/year	**0.0001** tons/year
5.12.	**Xylenes**	**1330-20-7**	**0.0019 lbs/hour**	**lbs/hour**	**0.0005** tons/year	**0.000** tons/year
5.13.	**Acetaldehyde**	**75-07-0**	**0.0002 lbs/hour**	**lbs/hour**	**0.0001** tons/year	**0.000** tons/year
5.14.	**Acrolein**	**107-02-8**	**0.0001 lbs/hour**	**lbs/hour**	**0.000** tons/year	**0.000** tons/year
5.15.	**Naphthalene**	**91-20-3**	**0.0013 lbs/hour**	**lbs/hour**	**0.0003** tons/year	**0.000** tons/year
5.16.	**Formaldehyde**	**50-00-0**	**0.0008 lbs/hour**	**lbs/hour**	**0.0002** tons/year	**0.0000** tons/year
5.17			**lbs/hour**	**lbs/hour**	tons/year	tons/year
5.18.			**lbs/hour**	**lbs/hour**	tons/year	tons/year

6. Provide Any Additional Information Necessary to Understanding the Emission Rates Provided Above: **Annual PTE is based upon 500 hours of operation per year. Expected annual emissions is based on 52 hours of opertion per year (testing and maintenance opertion only).**

Attach the Basis of Determination or Calculations for each Emission Rate provided above.

Emissions Information for Second Emission Point/Stack

7. Emission Point Name:

8. Equipment ID Number for all Process Equipment and Control Devices Venting Through Emission Point/Stack:

9. Pollutant Emissions

If more than 18 pollutants are emitted at this Emission Point/Stack, attach additional copies of this page as needed.

Pollutant Name (Specify VOCs and HAPs	CAS Number (Not required for	Maximum Uncontrolled Emission Rate at	Maximum Controlled Emission Rate at	Annual Potential to Emit (PTE)	Expected Annual

Emissions Information for Second Emission Point/Stack

	Individually in 9.10 through 9.18)	9.1 through 9.9)	Design Capacity	Design Capacity		Emissions
9.1.	Particulate Matter (PM)		**lbs/hour**	**lbs/hour**	tons/year	tons/year
9.2.	PM_{10}		**lbs/hour**	**lbs/hour**	tons/year	tons/year
9.3.	$PM_{2.5}$		**lbs/hour**	**lbs/hour**	tons/year	tons/year
9.4.	Sulfur Oxides (SO_X)		**lbs/hour**	**lbs/hour**	tons/year	tons/year
9.5.	Nitrogen Oxides (NO_X)		**lbs/hour**	**lbs/hour**	tons/year	tons/year
9.6.	Carbon Monoxide (CO)		**lbs/hour**	**lbs/hour**	tons/year	tons/year
9.7.	Lead		**lbs/hour**	**lbs/hour**	tons/year	tons/year
9.8.	Total Volatile Organic Compounds (VOCs)		**lbs/hour**	**lbs/hour**	tons/year	tons/year
9.9.	Total Hazardous Air Pollutants (HAPs)		**lbs/hour**	**lbs/hour**	tons/year	tons/year
9.10.			**lbs/hour**	**lbs/hour**	tons/year	tons/year
9.11.			**lbs/hour**	**lbs/hour**	tons/year	tons/year
9.12.			**lbs/hour**	**lbs/hour**	tons/year	tons/year
9.13.			**lbs/hour**	**lbs/hour**	tons/year	tons/year
9.14.			**lbs/hour**	**lbs/hour**	tons/year	tons/year
9.15.			**lbs/hour**	**lbs/hour**	tons/year	tons/year
9.16.			**lbs/hour**	**lbs/hour**	tons/year	tons/year
9.17			**lbs/hour**	**lbs/hour**	tons/year	tons/year
9.18.			**lbs/hour**	**lbs/hour**	tons/year	tons/year

10. Provide Any Additional Information Necessary to Understanding the Emission Rates Provided Above:

Emissions Information for Second Emission Point/Stack

Attach the Basis of Determination or Calculations for each Emission Rate provided above.

Emissions Information for Third Emission Point/Stack

11. Emission Point Name:

12. Equipment ID Number for all Process Equipment and Control Devices Venting Through Emission Point/Stack:

13. Pollutant Emissions

If more than 18 pollutants are emitted at this Emission Point/Stack, attach additional copies of this page as needed.

	Pollutant Name (Specify VOCs and HAPs Individually in 13.10 through 13.18)	CAS Number (Not required for 13.1 through 13.9)	Maximum Uncontrolled Emission Rate at Design Capacity	Maximum Controlled Emission Rate at Design Capacity	Annual Potential to Emit (PTE)	Expected Annual Emissions
13.1.	Particulate Matter (PM)		**lbs/hour**	**lbs/hour**	tons/year	tons/year
13.2.	PM_{10}		**lbs/hour**	**lbs/hour**	tons/year	tons/year
13.3.	$PM_{2.5}$		**lbs/hour**	**lbs/hour**	tons/year	tons/year
13.4.	Sulfur Oxides (SO_X)		**lbs/hour**	**lbs/hour**	tons/year	tons/year
13.5.	Nitrogen Oxides (NO_X)		**lbs/hour**	**lbs/hour**	tons/year	tons/year
13.6.	Carbon Monoxide (CO)		**lbs/hour**	**lbs/hour**	tons/year	tons/year
13.7.	Lead		**lbs/hour**	**lbs/hour**	tons/year	tons/year
13.8.	Total Volatile Organic Compounds (VOCs)		**lbs/hour**	**lbs/hour**	tons/year	tons/year
13.9.	Total Hazardous Air Pollutants (HAPs)		**lbs/hour**	**lbs/hour**	tons/year	tons/year
13.10.			**lbs/hour**	**lbs/hour**	tons/year	tons/year
13.11.			**lbs/hour**	**lbs/hour**	tons/year	tons/year
13.12.			**lbs/hour**	**lbs/hour**	tons/year	tons/year

Emissions Information for Third Emission Point/Stack					
13.13.		**lbs/hour**	**lbs/hour**	tons/year	tons/year
13.14.		**lbs/hour**	**lbs/hour**	tons/year	tons/year
13.15.		**lbs/hour**	**lbs/hour**	tons/year	tons/year
13.16.		**lbs/hour**	**lbs/hour**	tons/year	tons/year
13.17		**lbs/hour**	**lbs/hour**	tons/year	tons/year
13.18.		**lbs/hour**	**lbs/hour**	tons/year	tons/year
14. Provide Any Additional Information Necessary to Understanding the Emission Rates Provided Above:					
Attach the Basis of Determination or Calculations for each Emission Rate provided above.					

Emissions Information for Fourth Emission Point/Stack					
15. Emission Point Name:					
16. Equipment ID Number for all Process Equipment and Control Devices Venting Through Emission Point/Stack:					
17. Pollutant Emissions					
If more than 18 pollutants are emitted at this Emission Point/Stack, attach additional copies of this page as needed.					
Pollutant Name (Specify VOCs and HAPs Individually in 17.10 through 17.18)	CAS Number (Not required for 17.1 through 17.9)	Maximum Uncontrolled Emission Rate at Design Capacity	Maximum Controlled Emission Rate at Design Capacity	Annual Potential to Emit (PTE)	Expected Annual Emissions
17.1. Particulate Matter (PM)		**lbs/hour**	**lbs/hour**	tons/year	tons/year
17.2. PM_{10}		**lbs/hour**	**lbs/hour**	tons/year	tons/year
17.3. $PM_{2.5}$		**lbs/hour**	**lbs/hour**	tons/year	tons/year
17.4. Sulfur Oxides (SO_X)		**lbs/hour**	**lbs/hour**	tons/year	tons/year

Emissions Information for Fourth Emission Point/Stack

17.5.	Nitrogen Oxides (NO_X)		**lbs/hour**	**lbs/hour**	tons/year	tons/year
17.6.	Carbon Monoxide (CO)		**lbs/hour**	**lbs/hour**	tons/year	tons/year
17.7.	Volatile Organic Compounds (VOCs)		**lbs/hour**	**lbs/hour**	tons/year	tons/year
17.8.	Lead		**lbs/hour**	**lbs/hour**	tons/year	tons/year
17.9.			**lbs/hour**	**lbs/hour**	tons/year	tons/year
17.10.			**lbs/hour**	**lbs/hour**	tons/year	tons/year
17.11.			**lbs/hour**	**lbs/hour**	tons/year	tons/year
17.12.			**lbs/hour**	**lbs/hour**	tons/year	tons/year
17.13.			**lbs/hour**	**lbs/hour**	tons/year	tons/year
17.14.			**lbs/hour**	**lbs/hour**	tons/year	tons/year
17.15.			**lbs/hour**	**lbs/hour**	tons/year	tons/year
17.16.			**lbs/hour**	**lbs/hour**	tons/year	tons/year
17.17			**lbs/hour**	**lbs/hour**	tons/year	tons/year
17.18.			**lbs/hour**	**lbs/hour**	tons/year	tons/year

18. Provide Any Additional Information Necessary to Understanding the Emission Rates Provided Above:

Attach the Basis of Determination or Calculations for each Emission Rate provided above.

If there are more than four Emission Points/Stacks, attach additional copies of this form as needed.

Overall Process Emissions

19. Pollutant Emissions

If more than 18 pollutants are emitted from this Process, attach additional copies of this page as needed.

Overall Process Emissions

	Pollutant Name (Specify VOCs and HAPs Individually in 19.10 through 19.18)	CAS Number (Not required for 19.1 through 19.9)	Maximum Uncontrolled Emission Rate at Design Capacity	Maximum Controlled Emission Rate at Design Capacity	Annual Potential to Emit (PTE)	Expected Annual Emissions
19.1.	Particulate Matter (PM)		**0.492 lbs/hour**	**lbs/hour**	**0.123** tons/year	**0.013** tons/year
19.2.	PM_{10}		**0.492 lbs/hour**	**lbs/hour**	**0.123** tons/year	**0.013** tons/year
19.3.	$PM_{2.5}$		**0.492 lbs/hour**	**lbs/hour**	**0.123** tons/year	**0.013** tons/year
19.4.	Sulfur Oxides (SO_X)		**0.018 lbs/hour**	**lbs/hour**	**0.005** tons/year	**0.000** tons/year
19.5.	Nitrogen Oxides (NO_X)		**15.75 lbs/hour**	**lbs/hour**	**3.938** tons/year	**0.410** tons/year
19.6.	Carbon Monoxide (CO)		**8.53 lbs/hour**	**lbs/hour**	**2.133** tons/year	**0.222** tons/year
19.7.	Lead		**NA lbs/hour**	**lbs/hour**	**NA** tons/year	**NA** tons/year
19.8.	Total Volatile Organic Compounds (VOCs)		**15.75 lbs/hour**	**lbs/hour**	**3.938** tons/year	**0.410** tons/year
19.9.	Total Hazardous Air Pollutants (HAPs)		**0.0148 lbs/hour**	**lbs/hour**	**0.0037** tons/year	**0.0004** tons/year
19.10.	**Benzene**	**71-43-2**	**0.0077 lbs/hour**	**lbs/hour**	**0.0019** tons/year	**0.0002** tons/year
19.11.	**Toluene**	**108-88-3**	**0.0028 lbs/hour**	**lbs/hour**	**0.0007** tons/year	**0.0001** tons/year
19.12.	**Xylenes**	**1330-20-7**	**0.0019 lbs/hour**	**lbs/hour**	**0.0005** tons/year	**0.000** tons/year
19.13.	**Acetaldehyde**	**75-07-0**	**0.0002 lbs/hour**	**lbs/hour**	**0.0001** tons/year	**0.000** tons/year
19.14.	**Acrolein**	**107-02-8**	**0.0001 lbs/hour**	**lbs/hour**	**0.000** tons/year	**0.000** tons/year
19.15.	**Naphthalene**	**91-20-3**	**0.0013 lbs/hour**	**lbs/hour**	**0.0003** tons/year	**0.000** tons/year
19.16.	**Formaldehyde**	**50-00-0**	**0.0008 lbs/hour**	**lbs/hour**	**0.0002** tons/year	**0.000** tons/year
19.17			**lbs/hour**	**lbs/hour**	tons/year	tons/year
19.18.			**lbs/hour**	**lbs/hour**	tons/year	tons/year

Overall Process Emissions

20. Provide Any Additional Information Necessary to Understanding the Emission Rates Provided Above:

Attach the Basis of Determination or Calculations for each Emission Rate provided above.

Minor New Source Review Information

21. Does the Process Have the Potential to Emit More Than Five Tons Per Year of Any Pollutant? ☐ YES ☒ NO

22. Is the Source New or Existing? ☒ NEW ☐ EXISTING
See Question 11 of AQM-1

If the Process has the Potential to Emit more than five tons per year of any pollutant, and is a New Source, a Control Technology Analysis pursuant to Regulation No. 1125 Section 4 must be conducted and attached to this application.

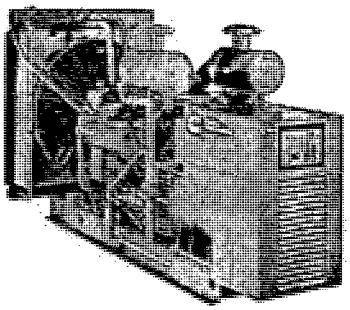
Additional Information

23. Is There Any Additional Information Pertinent to this Application? ☐ YES ☒ NO

If YES, complete the rest of Question 23.

23.1. Describe:

Diesel generator set
QST30 series engine



> Specification sheet
680 kW - 1000 kW 60 Hz

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Power Generation

Description

Cummins Power Generation commercial generator sets are fully integrated power generation systems providing optimum performance, reliability and versatility for stationary standby and prime power applications. Codes or standards compliance may not be available with all model configurations – consult factory for availability.

This generator set is designed in facilities certified to ISO 9001 and manufactured in facilities certified to ISO 9001 or ISO 9002.

The Prototype Test Support (PTS) program verifies the performance integrity of the generator set design. Cummins Power Generation products bearing the PTS symbol meet the prototype test requirements of NFPA 110 for Level 1 systems.

All low voltage models are CSA certified to product class 4215-01.

The generator set is available listed to UL 2200, Stationary Engine Generator Assemblies for all 60 Hz low voltage models. The PowerCommand control is Listed to UL 508 - Category NITW7 for U.S. and Canadian usage. Circuit breaker assemblies are UL 489 Listed for 100% continuous operation and also UL 869A Listed Service Equipment.

U.S. EPA Engine certified to Stationary Emergency U.S. EPA New Source Performance Standards, 40 CFR 60 subpart IIII Tier 2 exhaust emission levels. U.S. applications must be applied per this EPA regulation.

Features

Cummins® heavy-duty engine - Rugged 4-cycle, industrial diesel delivers reliable power, low emissions and fast response to load changes.

Alternator - Several alternator sizes offer selectable motor starting capability with low reactance 2/3 pitch windings, low waveform distortion with non-linear loads and fault clearing short-circuit capability.

Permanent magnet generator (PMG) - Offers enhanced motor starting and fault clearing short-circuit capability.

Control system - The PowerCommand® electronic control is standard equipment and provides total genset system integration including automatic remote starting/stopping, precise frequency and voltage regulation, alarm and status message display, AmpSentry™ protection, output metering, auto-shutdown at fault detection and NFPA 110 Level 1 compliance.

Cooling system - Standard integral set-mounted radiator system, designed and tested for rated ambient temperatures, simplifies facility design requirements for rejected heat.

NFPA - The genset accepts full rated load in a single step in accordance with NFPA 110 for Level 1 systems.

Warranty and service - Backed by a comprehensive warranty and worldwide distributor network.

	Standby rating		Prime rating		Continuous rating		Data sheets	
Model	60 Hz kW (kVA)	50 Hz kW (kVA)	60 Hz kW (kVA)	50 Hz kW (kVA)	60 Hz kW (kVA)	50 Hz kW (kVA)	60 Hz	50 Hz
DQFAA	750 (938)		680 (850)				D-3329	
DQFAB	800 (1000)		725 (907)				D-3330	
DQFAC	900 (1125)		818 (1023)				D-3331	
DQFAD	1000 (1250)		900 (1125)				D-3332	

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Generator set specifications

Governor regulation class	ISO8328 Part 1 Class G3
Voltage regulation, no load to full load	± 0.5%
Random voltage variation	± 0.5%
Frequency regulation	Isochronous
Random frequency variation	± 0.25%
Radio frequency emissions compliance	IEC 801.2 through IEC 801.5; MIL STD 461C, Part 9

Engine specifications

Bore	140 mm (5.51 in)
Stroke	165.0 mm (6.5 in)
Displacement	30.5 litres (1860 in^3)
Configuration	Cast iron, V 12 cylinder
Battery capacity	1800 amps minimum at ambient temperature of -18 °C to 0 °C (0 °F to 32 °F)
Battery charging alternator	35 amps
Starting voltage	24 volt, negative ground
Fuel system	Direct injection: number 2 diesel fuel, fuel filter, automatic electric fuel shutoff
Fuel filter	Triple element, 10 micron filtration, spin-on fuel filter with water separator
Air cleaner type	Dry replaceable element
Lube oil filter type(s)	Four spin-on, combination full flow filter and bypass filters
Standard cooling system	High ambient radiator

Alternator specifications

Design	Brushless, 4 pole, drip proof revolving field
Stator	2/3 pitch
Rotor	Single bearing, flexible discs
Insulation system	Class H on low and medium voltage, Class F on high voltage
Standard temperature rise	150 °C standby at 40 °C
Exciter type	PMG (permanent magnet generator)
Phase rotation	A (U), B (V), C (W)
Alternator cooling	Direct drive centrifugal blower fan
AC waveform total harmonic distortion	< 5% no load to full linear load, < 3% for any single harmonic
Telephone influence factor (TIF)	< 50 per NEMA MG1-22.43
Telephone harmonic factor (THF)	< 3

Available voltages

60 Hz line-neutral/line-line				50 Hz line-neutral/line-line			
• 120/208	• 220/380	• 240/416	• 347/600				
• 139/240	• 230/400	• 277/480					

* Note: Consult factory for other voltages.

Generator set options and accessories

Engine
- ☐ 208/240/480 V coolant heater for ambient above 4.5 °C (40 °F)
- ☐ 208/240/480 V coolant heater for ambient below 4.5 °C (40 °F)

Control panel
- ☐ 120/240 V 100 W control anti-condensation heater
- ☐ Paralleling configuration
- ☐ Remote fault signal package
- ☐ Run relay package

Alternator
- ☐ 80 °C rise
- ☐ 105 °C rise
- ☐ 125 °C rise
- ☐ 120/240 V 300 W, anti-condensation heater
- ☐ Temperature sensor - RTDs, 2/phase
- ☐ Temperature sensor – alternator bearing RTD
- ☐ Differential current transformers

Exhaust system
- ☐ Industrial grade exhaust silencer
- ☐ Residential grade exhaust silencer
- ☐ Critical grade exhaust silencer

Cooling system
- ☐ Remote radiator

Generator set
- ☐ AC entrance box
- ☐ Battery
- ☐ Battery rack with hold-down - floor standing
- ☐ Circuit breaker - set mounted
- ☐ Disconnect switch - set mounted
- ☐ PowerCommand Network
- ☐ Remote annunciator panel
- ☐ Spring isolators
- ☐ 2 year warranty
- ☐ 5 year warranty
- ☐ 10 year major components warranty

* Note: Some options may not be available on all models - consult factory for availability.

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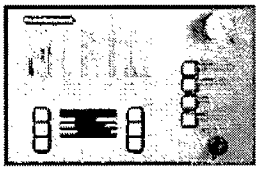
Power Generation

Control system PCC 3201



PowerCommand control is an integrated generator set control system providing governing, voltage regulation, engine protection and operator interface functions. Major features include:

- Integral AmpSentry™ Protective Relay providing a full range of alternator protection functions that are matched to the alternator provided.
- Battery monitoring and testing features and smart starting control system.
- Three phase sensing, full wave rectified voltage regulation system, with a PWM output for stable operation with all load types.
- Control suitable for operation in ambient temperatures from -40 °C to +70 °C (-40 °F to +158 °F) and altitudes to 5000 meters (13,000 feet).
- Prototype tested; UL, CSA, and CE compliant.
- InPower™ PC-based service tool available for detailed diagnostics.
- Optional Echelon® LONWORKS® network interface.

Operator/display panel

- Off/manual/auto mode switch
- Manual run/stop switch
- Panel lamp test switch
- Emergency stop switch
- Exercise switch
- Alpha-numeric display with pushbutton access for viewing engine and alternator data and providing setup, controls and adjustments
- LED lamps indicating not in auto, common warning, common shutdown, remote start
- Configurable for local language

Engine protection

- Overspeed shut down
- Low oil pressure warning and shut down
- High coolant temperature warning and shut down
- High oil temperature warning
- Low coolant level warning or shut down
- Low coolant temperature warning
- High and low battery voltage warning
- Weak battery warning
- Dead battery shut down
- Fail to start (overcrank) shut down
- Fail to crank shut down
- Redundant start disconnect
- Cranking lockout
- Sensor failure indication

Engine data

- DC voltage
- Lube oil pressure
- Coolant temperature
- Lube oil temperature
- Engine speed
- Engine ECM data

AmpSentry AC protection

- Over current and short-circuit shut down
- Over current warning
- Single and three phase fault regulation
- Over and under voltage shut down
- Over and under frequency shut down
- Overload warning with alarm contact
- Reverse power and reverse Var shut down

Alternator data

- Line-to-line and line-to-neutral AC volts
- Three phase AC current
- Frequency
- Total and individual phase power factor, kW and kVA
- Bus voltage and frequency (with paralleling options)

Other data

- Genset model data
- Start attempts, starts, running hours
- kW hours (total and since reset)
- Fault history
- Load profile (accessible with InPower)

Governing

- Digital electronic isochronous governor
- Temperature dynamic governing
- Smart idle speed mode

Voltage regulation

- Digital PWM electronic voltage regulation
- Three phase line-to-neutral sensing
- Single and three phase fault regulation
- Configurable torque matching

Control functions

- Data logging on faults
- Fault simulation (requires InPower)
- Time delay start and cooldown
- Cycle cranking
- Configurable customer outputs (4)
- Configurable network inputs (8) and outputs (16) (with optional network)
- Remote emergency stop

Paralleling (Option)

- Active digital phase lock loop synchronizer
- Isochronous kW and kVar load sharing controls
- kW import/export and kVar/PF control for utility (mains) paralleling

Options

- ☐ Thermostatically controlled space heater
- ☐ Key-type mode switch
- ☐ Ground fault module
- ☐ Auxiliary relays (3)
- ☐ Echelon LONWORKS interface
- ☐ Modion Gateway to convert to Modbus (loose)
- ☐ PowerCommand iWatch web server for remote monitoring and alarm notification (loose)
- ☐ Digital input and output module(s) (loose)
- ☐ Remote annunciator (loose)
- ☐ Paralleling
- ☐ Power transfer control

For further detail see document S-1444.

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Power Generation