PIMA COUNTY DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR PROGRAM

33 N. Stone Avenue, Suite 700 • Tucson, Arizona 85701 • Phone: (520) 724-7400

AIR QUALITY PERMIT

(As required by Title 17.12, Article II, Pima County Code)

ISSUED TO

RAYTHEON COMPANY
MISSILE SYSTEMS

1151 EAST HERMANS ROAD
TUCSON, ARIZONA 85756

This air quality permit does not relieve applicant of responsibility for meeting all air pollution regulations

THIS PERMIT ISSUED SUBJECT TO THE FOLLOWING **Conditions contained in Categories A, B, C, D, E, F, Additional and Attachments 1 and 2**

PERMIT NUMBER **1978** PERMIT CLASS **II**

ISSUED: **September 22, 2016** EXPIRES: **September 21, 2021**

Rupesh Patel

Rupesh Patel, Air Permit Manager, PDEQ

SIGNATURE TITLE

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Permit Summary

Raytheon Company, Missile Systems (RMS) designs, develops and assembles defense systems. RMS operates within facilities and property leased from the Air Force and the Tucson Airport Authority, located at 1151 East Hermans Road, Tucson, Arizona 85756. Significant process related activities which produce air emissions include plant-wide chemical usage, fuel fired equipment and other spray coating related activities.

Potential emissions resulting from the facility operations include NO_X, VOC, HAPs, PM_{10}, SO_X and CO. This facility is a true minor source for all regulated air pollutants.

The following emission rates are for reference purposes only and are not intended to be enforced by direct measurement unless otherwise noted in the Specific Conditions of this permit.

Pollutant	Potential Emissions (Tons per Year)
Nitrogen Oxides (NO_X)	21
Carbon Monoxide (CO)	*10
Volatile Organic Compounds (VOC)	**63
Particulate Matter (as PM_{10})	*<2
Sulfur Oxides (SO_X)	*<1
Hazardous Air Pollutants (HAPs – individual)	<5
Hazardous Air Pollutants (HAPs – total combined)	<5

* RMS predominantly generates the potential emissions of NO_X, CO, PM_{10}, and SO_X solely from the combustion of fossil fuels. The newer federal regulations associated to internal combustion engines limit the maintenance and non-emergency use to 100 hours in any 12 month period. The regulation effectively eliminates the need for synthetic minor limitations on these regulated air pollutants. Potential emissions of NO_X, CO, and SO_X will remain below 90 tons per year. The emission factors used to determine the potential to emit are taken from EPA, AP-42, Volume I, Fifth Edition.

** Potential emissions of VOC and combined HAPs are calculated using current hourly operations multiplied by a factor of 1.73 to represent 8760 operating hours per year. Actual (2012) emissions of VOC and combined HAPs based on current hourly operations are 38.19 TPY and 4.00 TPY respectively.

All requirements of this permit that are Federally Enforceable or Material Permit Conditions are specifically indicated as such.

Applicability

The affected sources at the facility to which this air quality permit applies are grouped into the following emission categories:

Category A New Source Performance Standards (NSPS) – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (40 CFR Part 60 Subpart IIII).
Emergency (Non Fire Pump) (CI ICE) Specific Conditions

Category B New Source Performance Standards (NSPS) – Standards of Performance for Stationary Compression Ignition Fire Pump Engines (40 CFR Part 60 Subpart IIII).

Category C New Source Performance Standards (NSPS) – Standards of Performance for Spark Ignition Internal Combustion Engines (40 CFR Part 60 Subpart JJJJ).

Category D National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines (40 CFR Part 63 Subpart ZZZZ).

Category E Material Issues (Applies to all chemical purchases made by RMS for process related activities).

Category F Other Facility Operations (Applies to all other operations at the facility specifically non-NSPS generators and boilers).

Category A

New Source Performance Standards (NSPS) for Stationary Compression Ignition Internal Combustion Engines (CI ICE) (40 CFR Part 60, Subpart IIII)

Emergency (non fire pump) (CI ICE) Specific Conditions

I. Applicability [40 CFR 60.4200]

The provisions of this Category apply to:

40 CFR 60, Subpart IIII – Standards of Performance for Stationary Compression Ignition (CI) Internal Combustion Engines (ICE) [PCC 17.16.490.A.81]

[Federally Enforceable Conditions]

1. Applicable to manufacturers, owners and operators of stationary CI ICE and other persons as specified below. For the purpose of this Category, the date that construction commences is the date the engine is ordered by the owner or operator. [40 CFR 60.4200(a)]

   a. Manufacturers of stationary CI ICE with a displacement less than 30 liters per cylinder, where the model year is: [40 CFR 60.4200(a)(1)]

      i. 2007 or later, for engines that are not fire pump engines.

   b. Owners and Operators of stationary CI ICE that commence construction after July 11, 2005 where the stationary CI ICE are: [40 CFR 60.4200(a)(2)]

      i. Manufactured after April 1, 2006, and are not fire pump engines.

   c. Owners and operators of any stationary CI ICE that are modified or reconstructed after July 11, 2005 and any person that modifies or reconstructs any stationary CI ICE after July 11, 2005. [40 CFR 60.4200(a)(3)]

II. Operational Limitations

A. Emission Standards

All subject stationary CI ICE identified in Table 1 through Table 3 of Attachment 2, must comply with the emission standards identified in Table A of this Category, for all pollutants, for the same model year and maximum engine power. [40 CFR 60.4205(a) & (b)]

B. Operational Condition

The Permittee must operate and maintain all subject stationary CI ICE according to the manufacturer's written instructions, or procedures developed by the Permittee that are approved by the engine manufacturer, over the entire life of the engine. The Permittee may only change those settings that are permitted by the manufacturer. [40 CFR 60.4206 & 40 CFR 60.4211(a)]

Table A

Emission Standards based on Model Year per 40 CFR 89.112 (Table 1), and 40 CFR 60 Subpart IIII (Tables 1 & 2) [g/kW-hr (g/hp-hr)]						
Maximum engine power	**Model years**	**PM**	**HC**	**NO_X +NMHC**	**NO_X**	**CO**
kW < 8 (<11 hp)	Pre-2007	1.0(0.75)		10.5 (7.8)		8.0 (6.0)
	2007	1.0		10.5		8.0
	2008 and later	0.40 (0.30)		7.5 (5.6)		8.0 (6.0)
8 ≤ kW < 19 (11 ≤ hp < 25)	Pre-2007	0.80 (0.60)		9.5 (7.1)		6.6 (4.9)
	2007	0.80		7.5		6.6
	2008 and later	0.40 (0.30)		7.5 (5.6)		6.6 (4.9)
19≤kW<37 (25 ≤ hp < 50)	Pre-2007	0.80 (0.60)		9.5 (7.1)		5.5 (4.1)
	2007	0.60		7.5		5.5
	2008 and later	0.30 (0.22)		7.5 (5.6)		5.5 (4.1)
37≤kW<75 (50 ≤ hp < 100)	Pre-2007				9.2 (6.9)	
	2007	0.40		7.5		5.0
	2008 and later	0.40		4.7		5.0
75≤kW<130 (100 ≤ hp < 175)	Pre-2007				9.2 (6.9)	
	2007 and later	0.30		4.0		5.0
130 ≤ kW ≤ 560 (175 ≤ hp ≤ 750)	Pre- 2007	0.54 (0.40)	1.3 (1.0)		9.2 (6.9)	11.4 (8.5)
	2007 and later	0.20		4.0		3.5
kW>560 (>750 hp)	Pre-2007	0.54 (0.40)	1.3 (1.0)		9.2 (6.9)	11.4 (8.5)
	2007 and later	0.20		6.4		3.5

II. Operational Limitations (continued)

C. Fuel Requirements [40 CFR 60.4207]

1. For stationary diesel fired CI ICE with a displacement of less than 30 liters per cylinder subject to this Category, the Permittee shall use diesel fuel that meets the following requirements on a per-gallon basis for nonroad diesel fuel: [40 CFR 60.4207(b) & 40 CFR 80.510(b)]

   a. Sulfur content 15 ppm maximum for Non Road diesel fuel. [40 CFR 80.510(b)(1)(i)]

   b. Cetane index or aromatic content, as follows: [40 CFR 80.510(b)(2)]

      i. A minimum cetane index of 40; or [40 CFR 80.510(b)(2)(i)]

      ii. A maximum aromatic content of 35 volume percent. [40 CFR 80.510(b)(2)(ii)]

2. With respect to pre-2011 model year stationary CI ICE subject to this Category, the Permittee may petition the Administrator for approval to use remaining non-compliant fuel that does not meet the fuel requirements of II.C.1 of this Category, beyond the dates required for the purpose of using up existing fuel inventories. If approved, the petition will be valid for a period of up to 6 months. If additional time is needed, the Permittee shall be required to submit a new petition. [40 CFR 60.4207(c)]

D. Installation Restrictions [40 CFR 60.4208]

1. The Permittee may not install stationary CI ICE (excluding fire pump engines) that do not meet the applicable requirements for 2007 model year engines in 40 CFR 60, Subpart IIII, as applicable. [40 CFR 60.4208(a)]

2. After December 31, 2009, the Permittee may not install stationary CI ICE with a maximum engine power of less than 25 HP (excluding fire pump engines) that do not meet the applicable requirements for 2008 model year engines in 40 CFR 60, Subpart IIII, as applicable. [40 CFR 60.4208(b)]

3. The requirements of II.D.1 through 2 of this Category do not apply to stationary CI ICE that have been modified or reconstructed, and do not apply to engines that were removed from one existing location and reinstalled at a new location. This provision does not extend to imported units which shall be treated as new sources. [40 CFR 60.4208(g) & (h)]

E. Operational Hours (Emergency Designation) [40 CFR 60.4211(e)]

Emergency stationary ICE may be operated for the purpose of maintenance checks and readiness testing, provided that the tests are recommended by Federal, State, or local government, the manufacturer, the vendor, or the insurance company associated with the engine. Maintenance checks and readiness testing of such units is limited to 100 hours per year. There is no time limit on the use of emergency stationary ICE in emergency situations. The Permittee may petition the Control Officer for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the Permittee maintains records indicating that Federal, State, or local standards require maintenance and testing of emergency ICE beyond 100 hours per year. Any operation other than emergency operation, and maintenance and testing as permitted in this Category, is prohibited.

F. Compliance Requirements [40 CFR 60.4211]

1. Engine Maintenance

The Permittee must operate and maintain the applicable stationary CI ICE and control device according to the manufacturer's written instructions or procedures developed by the Permittee that are approved by the engine manufacturer. In addition, the Permittee may only change those settings that are permitted by the manufacturer. [40 CFR 60.4211(a)]

2. Hour Meter Installation

The Permittee must install a non-resettable hour meter on each applicable stationary CI ICE prior to startup of each engine. [40 CFR 60.4209(a)]

III. Monitoring Requirements [PCC 17.12.185.A.3]

None Required.

IV. Recordkeeping Requirements

A. Compliance Requirements (Emission Standards)

1. All subject pre-2007 model year stationary CI ICE that comply with the emission standards specified in II.A of this Category must demonstrate compliance according to one of the methods specified in paragraphs 'a.' through 'e.' of this section: [40 CFR 60.4211(b)]

   a. Purchasing an engine certified according to 40 CFR part 89 or 40 CFR part 94, as applicable, for the same model year and maximum engine power. The engine must be installed and configured according to the manufacturer's specifications. [40 CFR 60.4211(b)(1)]

   b. Keeping records of performance test results for each pollutant for a test conducted on a similar engine. The test must have been conducted using the same methods specified in 40 CFR 60.4212 and these methods must have been followed correctly. [40 CFR 60.4211(b)(2)]

   c. Keeping records of engine manufacturer data indicating compliance with the standards. [40 CFR 60.4211(b)(3)]

   d. Keeping records of control device vendor data indicating compliance with the standards. [40 CFR 60.4211(b)(4)]

   e. Conducting an initial performance test to demonstrate compliance with the emission standards according to the requirements specified in 40 CFR 60.4212, as applicable. [40 CFR 60.4211(b)(5)]

2. All subject 2007 model year and later stationary CI ICE must comply with the emission standards specified in II.A of this Category by demonstrating that the engine is certified to the emission standards in Table A of this Category, for the same model year and maximum engine power. The CI ICE engine must be installed and configured according to the manufacturer's specifications. [40 CFR 60.4211(c)]

B. Hourly Operational Records

1. In order to demonstrate compliance with operational hour limitation in II.E of this Category, the Permittee shall record the monthly maintenance checks and readiness testing operating hours for each subject engine. In addition, the Permittee shall recalculate a rolling twelve (12) month total within 30 calendar days of the end of the month. [PCC 17.12.185.A.4]

2. Starting with the model years in Table B of this Category, if the emergency engine does not meet the standards identified in Table A of this Category in the applicable model year, the Permittee must keep records of the operation of the engine in emergency and non-emergency service that are recorded through the non-resettable hour meter. The Permittee shall record the time of operation of the engine and the reason the engine was in operation during that time. [40 CFR 60.4214(b)]

Table B

Recordkeeping Requirements for New Stationary Emergency Engines (40 CFR 60, Subpart IIII, Table 5)	
Engine Power	**Starting model year**
$19 \leq kW < 56$ $(25 \leq HP < 75)$	2013
$56 \leq kW < 130$ $(75 \leq HP < 175)$	2012
$kW \geq 130$ $(HP \geq 175)$	2011

C. Manufacturer Certifications

The Permittee shall maintain records of manufacturer certifications that identify the applicable emission limits for the appropriate model year and maximum engine power and certify the applicable engines to those standards. [PCC 17.12.185.A.4]

D. Diesel Fuel Recordkeeping

The Permittee shall maintain records that verify compliance with the diesel fuel requirements in II.C of this Category. [PCC 17.12.185.A.4]

E. Facility Recordkeeping

All records required by, or generated to verify compliance with this Category shall be maintained for five years. [PCC 17.12.185.A.4]

V. Reporting Requirements

The Permittee shall report to the Control Officer any emissions in excess of the limits established by this permit according to Additional Permit Requirements of this permit. [40 CFR 60.4214 (a)(1) & PCC 17.12.185.A.5]

VI. Testing Requirements

Should the Permittee elect to or be required to conduct performance testing to demonstrate compliance with the applicable standards of this Category, the Permittee shall do so in accordance with 40 CFR 60.4212. [40 CFR 60.4212 & PCC 17.12.185.A.3.a]

VII. Additional Requirements

The General Provisions of 40 CFR 60.1 through 19 apply to applicable sources as indicated in Table 8 of 40 CFR Subpart IIII except that the Permittee is not required to submit an initial notification. [40 CFR 60.4218 & 40 CFR 60.4214(b)]

Category B

New Source Performance Standards (NSPS) for Stationary Compression Ignition Internal Combustion Engines (CI ICE) (40 CFR Part 60, Subpart IIII)

Emergency (Fire Pump) (CI ICE) Specific Conditions

I. Applicability [40 CFR 60.4200(a)(2)(ii)]

The standards contained in this Attachment apply to owners/operators of stationary compression ignition engines that are manufactured as a certified National Fire Protection Association (NFPA) fire pump engine after July 1, 2006. These standards are required in addition to those in the Facility Wide Specific Conditions and Additional Permit Requirements. **All conditions in this attachment are Federally Enforceable Conditions.**

II. Operational Limitations [PCC 17.12.185.A.2]

A. Emission Limitations

1. CI ICE subject to this Attachment must be certified by the manufacturer at or below the applicable emission standards and shall continue to meet them for the certified emissions life of the engine. Applicable emission standards and the certified emissions life of the engine are identified in Table 2 of Attachment 2. [40 CFR 60.4203, 60.4205(c), & Table 4 of Subpart IIII]

2. The Permittee must operate and maintain applicable units according to the manufacturer's written instructions or procedures developed by the Permittee that are approved by the engine manufacturer, over the entire life of the engine. [40 CFR 60.4206]

B. Fuel Requirements [40 CFR 60.4207]

Beginning October 1, 2010, fire pump engines with a displacement of less than 30 liters per cylinder that use diesel fuel must purchase diesel fuel that meets the following requirements on a per-gallon basis: [40 CFR 60.4207(b) & 40 CFR 80.510(b)]

a. Sulfur content: 15 ppm maximum;

b. Cetane index or aromatic content, as follows:

i. A minimum cetane index of 40; or

ii. A maximum aromatic content of 35 volume percent.

C. Emergency Designation [40 CFR 60.4211(f)]

Emergency fire pump engines may be operated for the purpose of maintenance checks and readiness testing, provided that the tests are recommended by Federal, State, or local government, the manufacturer, the vendor, or the insurance company associated with the engine. Maintenance checks and readiness testing of such units are limited to 100 hours per year. There is no time limit on the use of emergency stationary ICE in emergency situations. The Permittee may petition the Control Officer for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the Permittee maintains records indicating that Federal, State, or local standards require maintenance and testing of emergency ICE beyond 100 hours per year. Emergency stationary ICE may operate up to 50 hours per year in non-emergency situations, but those 50 hours are counted towards the 100 hours per year provided for maintenance and testing. The 50 hours per year for non-emergency situations cannot be used for peak shaving or to generate income for a

facility to supply power to an electric grid or otherwise supply non-emergency power as part of a financial arrangement with another entity. For owners and operators of emergency engines, any operation other than emergency operation, maintenance and testing, and operation in non-emergency situations for 50 hours per year, as permitted in II.D of this Category, is prohibited.

D. Compliance [40 CFR 60.4211]

1. The Permittee must operate and maintain the fire pump engine(s) and control device (if applicable) according to the manufacturer's emission-related written instructions or procedures developed by the Permittee that are approved by the engine manufacturer. In addition, the Permittee may only change those settings that are permitted by the manufacturer.
[40 CFR 60.4211(a)]

2. With respect to CI fire pump engines manufactured prior to the model years in the following table, the Permittee must demonstrate compliance according to one of the following methods:
[40 CFR 60.4211(b) & Table 3 of Subpart IIII]

Engine Power	Model Year
HP<100	2011
100≤HP<175	2010
175≤HP≤750	2009
HP>750	2008

a. Purchasing an engine certified according to 40 CFR part 89 or 40 CFR part 94, as applicable, for the same model year and maximum engine power. The engine must be installed and configured according to the manufacturer's specifications.

b. Keeping records of performance test results for each pollutant for a test conducted on a similar engine. The test must have been conducted using the same methods specified in 40 CFR 60.4212 and the methods must have been followed correctly.

c. Keeping records of engine manufacturer data indicating compliance with the standards.

d. Keeping records of control device vendor data indicating compliance with the standards.

e. Conducting an initial performance test to demonstrate compliance with the emission standards according to the requirements specified in 40 CFR 60.4212, as applicable.

3. With respect to CI fire pump engines manufactured during or after the model years in the table in II.D.2 of this Category, the Permittee must demonstrate compliance with the emission standards specified in Table 2 of Attachment 2 by purchasing an engine certified to those emission standards. The engine must be installed and configured according to the manufacturer's emission-related specifications, except as permitted in 40 CFR 60.4211(g).
[40 CFR 60.4211(c)]

III. Monitoring Requirement [PCC 17.12.185.A.3.d]

The Permittee must install a non-resettable hour meter on each CI fire pump engine prior to startup of each engine.

IV. Recordkeeping Requirements [PCC 17.12.185.A.4]

A. Hourly Operational Records [40 CFR 60.4214(b)]

Starting with the model years in the following table, if the emergency fire pump engine(s) does not meet the standards applicable to a non-emergency unit for the same model year and horsepower, the Permittee must keep records of the operation of the engine in emergency and non-emergency service that are recorded through the non-resettable hour meter. The Permittee must also record the time of operation of the engine and the reason the engine was in operation during that time.

Engine Power	Model Year
25≤HP<75	2013
75≤HP<175	2012
HP≥175	2011

B. Diesel Fuel Recordkeeping

The Permittee shall maintain records that verify compliance with the diesel fuel requirements in II.B of this Category.

V. Testing Requirements [40 CFR 60.4212 & PCC 17.12.185.A.3.a]

Should the Permittee elect to or be required to conduct performance testing to demonstrate compliance with the applicable standards of this Attachment, the Permittee must do so in accordance with 40 CFR 60.4212.

VI. Additional Requirements [40 CFR 60.4218 & 40 CFR 60.4214(b)]

The General Provisions of 40 CFR 60.1 through 19 apply to all applicable fire pump engine(s) as indicated in Table 8 of 40 CFR Subpart IIII except that the Permittee is not required to submit an initial notification.

VII Facility Recordkeeping [PCC 17.12.185.A.4]

All records required by, or generated to verify compliance with this attachment shall be maintained for five years.

Category C

New Source Performance Standards (NSPS) for Stationary Spark Ignition Internal Combustion Engines (SI ICE) (40 CFR Part 60, Subpart JJJJ)

I. Applicability

The provisions of this Category apply to SI ICE that commenced construction after June 12, 2006, where the SI ICE are manufactured on or after January 1, 2009, for emergency engines with a maximum engine power greater than 19 KW (25 HP). For the purposes of Subpart JJJJ, the date that construction commences is the date the engine is ordered by the owner or operator. The applicable SI ICE are identified in Table 4, Attachment 2 of this permit. [40 CFR 60.4230(a)(4)(iv)]

All terms and conditions of this permit are Federally Enforceable by the Administrator of the United States Environmental Protection Agency (U.S. EPA) under the Clean Air Act, except as otherwise noted.

II. Operational Limitations

A. Emission Standards [40 CFR 60.4233]

1. NO_X, CO and VOC

The Permittee must comply with the emission standards in Table 1 of Subpart JJJJ (shown below) for their stationary SI ICE. [40 CFR 60.4233(d) & 40 CFR 60.4233(e)]

Emission Standards for SI ICE (Ref: Table 1 to 40 CFR Part 60, Subpart JJJJ)

Engine Type	RMS SI ICE Equipment ID	Maximum Engine Power	Manufacture Date	Emission Standards g/HP-hr or [ppmvd at 15% O_2]		
				NO_X	CO	VOC[a]
Emergency	24733401 24709186 23699517	25>HP<130	January 1, 2009	10[b]	387	N/A
Emergency	24739807 24365423 24071374 25956153	HP≥130	January 1, 2009	2.0 [160]	4.0 [540]	1.0 [86]

[a] For purposes of 40 CFR 60, Subpart JJJJ, when calculating emissions of volatile organic compounds, emissions of formaldehyde should not be included.

[b] The emission standards applicable to emergency engines between 25 HP and 130 HP are in terms of NO_X+HC.

2. Opacity

The Permittee shall not cause, allow, or permit the effluent from any stationary SI ICE to have an average opacity density equal to or greater than 20 percent. [PCC 17.16.040.A]

B. Operational Condition

The Permittee must operate and maintain stationary SI ICE that achieves the emission standards as required in II.A.1 of this Category over the entire life of the engine. [40 CFR 60.4234]

C. Fuel Requirements

The Permittee shall burn only the specified fuel allowed for the stationary SI ICE in Table 5, Attachment 2 of this permit. [PCC 17.12.185.A.2]

[Material Permit Condition]

D. Installation Restrictions [40 CFR 60.4236]

1. After July 1, 2010, the Permittee may not install stationary SI ICE with a maximum engine power of less than 500 HP that do not meet the applicable requirements in 40 CFR 60.4233. [40 CFR 60.4236(a)]

2. After July 1, 2009, the Permittee may not install stationary SI ICE with a maximum engine power of greater than or equal to 500 HP that do not meet the applicable requirements in 40 CFR 60.4233, except that lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP that do not meet the applicable requirements in 40 CFR 60.4233 may not be installed after January 1, 2010. [40 CFR 60.4236(b)]

3. For emergency stationary SI ICE with a maximum engine power of greater than 19 KW (25 HP), the Permittee may not install engines that do not meet the applicable requirements in 40 CFR 60.4233 after January 1, 2011. [40 CFR 60.4236(c)]

4. In addition to the requirements specified in 40 CFR 60.4231 and 40 CFR 60.4233, it is prohibited to import stationary SI ICE less than or equal to 19 KW (25 HP), stationary rich burn LPG SI ICE, and stationary gasoline SI ICE that do not meet the applicable requirements specified in paragraphs II.D.1, II.D.2 and II.D.3 of this Category, after the date specified in paragraph II.D.1, II.D.2 and II.D.3 of this Category. [40 CFR 60.4236(d)]

5. The requirements of section II.D of this Category do not apply to stationary SI ICE that have been modified or reconstructed, and they do not apply to engines that were removed from one existing location and reinstalled at a new location. [40 CFR 60.4236(e)]

E. Compliance Requirements [40 CFR 60.4243]

1. The Permittee must demonstrate compliance with the emission standards specified in section II.A.1 of this Category according to one of the methods II.E.1.a and II.E.1.b of this Category: [40 CFR 60.4243(b)]

   a. Purchasing an engine certified according to procedures specified in Subpart JJJJ, for the same model year and demonstrating compliance according to one of the methods specified below: [40 CFR 60.4243(b)(1)]

      i. Certified stationary SI internal combustion engine and control device operated and maintained according to the manufacturer's emission-related written instructions, the Permittee must keep records of conducted maintenance to demonstrate compliance, but no performance testing is required. [40 CFR 60.4243(a)(1)]

ii Certified stationary SI internal combustion engine and control device not operated and maintained according to the manufacturer's emission-related written instructions, is considered a non-certified engine, and the Permittee must demonstrate compliance according to II.E.1.a.ii.(A) through II.E.1.a.ii.(C) of this Category, as appropriate. [40 CFR 60.4243(a)(2)]

(A) Owner or operator of a stationary SI internal combustion engine less than 100 HP:

The Permittee must keep a maintenance plan and records of conducted maintenance to demonstrate compliance and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions, but no performance testing is required if you are an owner or operator. [40 CFR 60.4243(a)(2)(i)]

(B) Owner or operator of a stationary SI internal combustion engine greater than or equal to 100 HP and less than or equal to 500 HP:

The Permittee must keep a maintenance plan and records of conducted maintenance and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. In addition, the Permittee must conduct an initial performance test within 1 year of engine startup to demonstrate compliance. [40 CFR 60.4243(a)(2)(ii)]

(C) Owner or operator of a stationary SI internal combustion engine greater than 500 HP:

The Permittee must keep a maintenance plan and records of conducted maintenance and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. In addition, the Permittee must conduct an initial performance test within 1 year of engine startup and conduct subsequent performance testing every 8,760 hours or 3 years, whichever comes first, thereafter to demonstrate compliance. [40 CFR 60.4243(a)(2)(iii)]

b. Purchasing a non-certified SI ICE greater than 25 HP and less than or equal to 500 HP, that is in compliance with the emission standards specified in II.A.1 of this Category and according to the requirements specified in IV.E of this Category, then the Permittee must keep a maintenance plan and records of conducted maintenance and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. In addition, the Permittee must conduct an initial performance test to demonstrate compliance. [40 CFR 60.4243(b)(2) & 40 CFR 60.4243(b)(2)(i)]

2. Emergency stationary SI ICE may be operated for the purpose of maintenance checks and readiness testing, provided that the tests are recommended by Federal, State or local government, the manufacturer, the vendor, or the insurance company associated with the engine. Maintenance checks and readiness testing of such units is limited to 100 hours per year. There is no time limit on the use of emergency stationary SI ICE in emergency situations. The Permittee may petition the Control Officer for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the Permittee maintains records indicating that Federal, State, or local standards require maintenance and testing of emergency SI ICE beyond 100 hours per year. Emergency stationary SI ICE may operate up to 50 hours per year in non-emergency situations, but those 50 hours are counted towards the 100 hours per year provided for maintenance and testing. The 50 hours per year for non-emergency situations cannot be used for peak shaving or to generate income for a facility to supply power to an electric grid or otherwise supply power as part of a financial arrangement with another entity. For owners and operators of emergency engines, any operation other than emergency operation, maintenance and testing, and operation in non-emergency situations for 50 hours per year, as permitted in this section, is prohibited. [40 CFR 60.4243(d)]

3. The Permittee may operate their stationary SI natural gas fired engines using propane for a maximum of 100 hours per year as an alternative fuel solely during emergency operations, but must keep records of such use. If propane is used for more than 100 hours per year in an engine that is not certified to the emission standards when using propane, the Permittee is required to conduct a performance test to demonstrate compliance with the emission standards in II.A of this Category. [40 CFR 60.4243(e) & 40 CFR 60.4233]

4. Stationary SI internal combustion engines at the facility less than or equal to 500 HP, purchased non-certified or not operated and maintained certified stationary SI internal combustion engine and control device according to the manufacturer's written emission-related instructions, the Permittee is required to perform initial performance testing as indicated in this section, but the Permittee is not required to conduct subsequent performance testing unless the stationary engine is rebuilt or undergoes major repair or maintenance. A rebuilt stationary SI ICE means an engine that has been rebuilt as that term is defined in 40 CFR 94.11(a). (See Technical Support Document accompanying this permit for the definition of a rebuilt stationary SI ICE). [40 CFR 60.4243(f)]

5. It is expected that air-to-fuel ratio (AFR) controllers will be used with the operation of three-way catalysts/non-selective catalytic reduction. The AFR controller must be maintained and operated appropriately in order to ensure proper operation of the engine and control device to minimize emissions at all times. [40 CFR 60.4243(g)]

III. Monitoring Requirements

A. Opacity

A demonstration to show compliance with the emission limitation for opacity in II.A.2 of this Category shall not be required since the percent of opacity of visible emissions from the stationary SI ICE while combusting natural gas fuel is inherently low. The Permittee shall operate and maintain the stationary SI ICE at all times - including periods of startup, shutdown, and malfunction - in a manner consistent with good air pollution control practices and consistent with manufacturer’s guidelines. [PCC 17.12.185.A.3]

B. Fuel Limitation

The Permittee shall be considered in compliance with the fuel limitation in II.C of this Category by demonstrating that only commercially available pipeline quality natural gas was fired in the stationary SI ICE listed. Such a demonstration may be made by making available to the Control Officer for his inspection, documentation, such as invoices or statements from the fuel supplier, showing that only commercial natural gas was purchased for use in the equipment. [PCC 17.12.185.A.3]

IV. Recordkeeping Requirements

Notifications, Reports and Records

The Permittee must keep records of all stationary SI ICE, the information in paragraphs A through D of this section. [40 CFR 60.4245(a)]

A. All notifications submitted to comply with this subpart and all documentation supporting any notification.

B. Records of conducted maintenance to demonstrate compliance. [40 CFR 60.4245(a)(2)]

C. If the stationary SI internal combustion engine is a certified engine, documentation from the manufacturer that the engine is certified to meet the emission standards and information as required in 40 CFR Parts 90 and 1048. [40 CFR 60.4245(a)(3)]

D. If the stationary SI internal combustion engine is not a certified engine or is a certified engine operating in a non-certified manner and subject to II.E.1.a.ii of this permit, documentation that the engine meets the emission standards. [40 CFR 60.4245(a)(4) & 40 CFR 60.4243(a)(2)]

V. Reporting Requirements

For all SI ICE that are subject to performance testing, the Permittee must submit a copy of each performance test as conducted in 40 CFR 60.4244 within 60 days after the test has been completed. [40 CFR 60.4245(d)]

VI. Facility Changes

A. Equipment changes/relocation

Raytheon Company, Missile Systems (RMS) may implement equipment changes, and/or on site relocation of equipment provided that the proposed equipment changes do not trigger the applicability of a federally enforceable condition. [PCC 17.12.185.A.2]

B. Revision Notification

When applicable, the Permittee shall submit the proper notification and follow the required permit revision procedures pursuant to PCC 17.12.240, PCC 17.12.255.B or PCC 17.12.260.

VII. Testing Requirements

For purposes of demonstrating compliance, these test methods shall be used, provided that for the purpose of establishing whether or not the facility has violated or is in violation of any provision of this permit, nothing in this permit shall preclude the use, including the exclusive use, of any credible evidence or information relevant to whether a facility would have been in compliance with applicable federal requirements if the appropriate performance or compliance procedures or methods had been performed. [PCC 17.20.010]

A. Opacity

When required by the Control Officer, the Permittee shall perform EPA Reference Method 9 visible emissions observations on the stationary SI ICE units identified in Table 4 of Attachment 2 to demonstrate compliance with the opacity standard in II.A.2 of this Category. [PCC 17.16.130.B]

B. Fuel Limitation

When required by the Control Officer, the Permittee need only demonstrate that pipeline quality natural gas was fired exclusively since the sulfur content of pipeline quality natural gas is regulated by the Federal Energy Regulatory Commission. [PCC 17.12.185.A.3 & PCC 17.20.010]

C. Alternative Test Method

The Permittee may submit an alternate and equivalent test method(s) that is listed in 40 CFR Subpart 60, Appendix A, to the Control Officer in a test plan, for approval by the Control Officer. [PCC 17.12.045.D]

D. Owners and operators of stationary SI ICE who conduct performance tests must follow the procedures in paragraphs (i) through (vi) of this section. [40 CFR 60.4244]

i. Each performance test must be conducted within 10 percent of 100 percent peak (or the highest achievable) load and according to the requirements in 40 CFR 60.8 and under the specific conditions that are specified by Table 2 to 40 CFR 60, Subpart JJJJ.

ii. You may not conduct performance tests during periods of startup, shutdown, or malfunction, as specified in 40 CFR 60.8(c). If your stationary SI internal combustion engine is non-operational, you do not need to start up the engine solely to conduct a performance test; however, you must conduct the performance test immediately upon startup of the engine.

iii. You must conduct three separate test runs for each performance test required in this section, as specified in 40 CFR 60.8(f). Each test run must be conducted within 10 percent of 100 percent peak (or the highest achievable) load and last at least 1 hour.

iv. To determine compliance with the NO_X mass per unit output emission limitation, convert the concentration of NO_X in the engine exhaust using Equation 1 below:

$$ER = \frac{C_d \times 1.912 \times 10^{-3} \times Q \times T}{HP - hr} \quad (Equation\ 1)$$

Where:

ER	=	Emission rate of NO_X in g/HP-hr.
C_d	=	Measured NO_X concentration in parts per million by volume (ppmv).
1.912×10^{-3}	=	Conversion constant for ppm NO_X to grams per standard cubic meter at 20 degrees Celsius.

Q	=	Stack gas volumetric flow rate, in standard cubic meter per hour, dry basis.
T	=	Time of test run, in hours.
HP-hr	=	Brake work of the engine, horsepower-hour (HP-hr).

v. To determine compliance with the CO mass per unit output emission limitation, convert the concentration of CO in the engine exhaust using Equation 2 below:

$$ER = \frac{C_d \times 1.164 \times 10^{-3} \times Q \times T}{HP - hr} \quad (Equation\ 2)$$

Where:

ER	=	Emission rate of CO in g/HP-hr.
C_d	=	Measured CO concentration in ppmv.
1.164×10^{-3}	=	Conversion constant for ppm CO to grams per standard cubic meter at 20 degrees Celsius.
Q	=	Stack gas volumetric flow rate, in standard cubic meters per hour, dry basis.
T	=	Time of test run, in hours.
HP-hr	=	Brake work of the engine, in HP-hr.

vi. For purposes of 40 CFR 60, Subpart JJJJ, when calculating emissions of VOC, emissions of formaldehyde should not be included. To determine compliance with the VOC mass per unit output emission limitation, convert the concentration of VOC in the engine exhaust using Equation 3 below:

$$ER = \frac{C_d \times 1.833 \times 10^{-3} \times Q \times T}{HP - hr} \quad (Equation\ 3)$$

Where:

ER	=	Emission rate of VOC in g/HP-hr.
C_d	=	VOC concentration measured as propane in ppmv.
1.833×10^{-3}	=	Conversion constant for ppm CO to grams per standard cubic meter at 20 degrees Celsius.
Q	=	Stack gas volumetric flow rate, in standard cubic meters per hour, dry basis.
T	=	Time of test run, in hours.
HP-hr	=	Brake work of the engine, in HP-hr.

vii. If the Permittee chooses to measure VOC emissions using either Method 18 of 40 CFR part 60, Appendix A, or Method 320 of 40 CFR part 63, Appendix A, then the Permittee has the option of correcting the measured VOC emissions to account for the potential differences in measured values between these methods and Method 25A. The results from Method 18 and Method 320 can be corrected for response factor differences using Equations 4 and 5 of this section. The corrected VOC concentration can then be placed on a propane basis using Equation 6 of this section.

$$RF_i = \frac{C_{Mi}}{CA_i} \quad (Equation\ 4)$$

Where:

RF_i = Response factor of compound i when measured with EPA Method 25A.
C_{Mi} = Measured concentration of compound i in ppmv as carbon.
C_{Ai} = True concentration of compound i in ppmv as carbon.

$$C_{icorr} = RF_i \times C_{imeas} \quad (Equation\ 5)$$

Where:

C_{icorr} = Concentration of compound i corrected to the value that would have been measured by EPA Method 25A, ppmv as carbon.
C_{imeas} = Concentration of compound i measured by EPA Method 320, ppmv as carbon.

$$C_{Peq} = 0.6098 \times C_{imeas} \quad (Equation\ 6)$$

Where:

C_{Peq} = Concentration of compound i in mg of propane equivalent per DSCM.

VIII. Additional Requirements

The Permittee is subject to the general provisions in 40 CFR 60.1 through 60.19, identified in Table 3 of 40 CFR 60, Subpart JJJJ. [40 CFR 60.4246]

Category D

National Emission Standards for Hazardous Air Pollutants (NESHAP) for Reciprocating Internal Combustion Engines 'RICE' (40 CFR Part 63, Subpart ZZZZ)

I. Applicability [40 CFR 63.6585]

This Section contains emission limitations and operating limitations for hazardous air pollutants (HAP) emitted from stationary reciprocating internal combustion engines (RICE) located at area sources of HAP emissions. This Section also contains requirements to demonstrate initial and continuous compliance with the emission limitations and operating limitations.

The applicable affected units subject to this Category are as follows:

- Existing Stationary Emergency Compression Ignition (CI) Engines >500 HP Located at Area Sources of HAP, Constructed before June 12, 2006. See Table 5, Attachment 2 of this permit for a list of the applicable emission units.

- Existing Stationary Emergency Compression (CI) Ignition Engines <500 HP Located at Area Sources of HAP, Constructed before June 12, 2006. See Table 6, Attachment 2 of this permit for a list of the applicable emission units.

- Existing Stationary Emergency Spark Ignition (SI) RICE ≤500 HP Located at Area Sources of HAP, Constructed Before June 12, 2006. See Table 7, Attachment 2 of this permit for a list of the applicable emission units.

II. Compliance Dates

The Permittee shall comply with the applicable emission limitations and operating limitations identified within this Category no later than the dates indicated below: [40 CFR 60.6595(a)]

Affected Source	Compliance Date	Attachment 2 Equipment List
CI RICE >500 HP	May 3, 2013	Table 4
CI RICE <500 HP	May 3, 2013	Table 5
SI RICE ≤500 HP	October 19, 2013	Table 6

III. Emission and Operating Limitations

A. Applicable Compliance Requirements

The Permittee must comply with the requirements in IV of this Category which apply.
[40 CFR 63.6603(a), 40 CFR Subpart ZZZZ, Table 2d & Table 2b]

B. Initial Compliance No Requirements

C. Numerical Emissions Limitations No Requirements

D. Operating Limitations No Requirements

E. Fuel Requirements No Requirements

F. Performance Tests No Requirements

IV. Monitoring, Installation, Collection, Operation and Maintenance Requirements

A. Maintenance Requirements

1. The Permittee must meet the following requirements, except during periods of start-up:
[40 CFR Subpart ZZZZ, Table 2d]

   a. For Each Emergency Stationary CI RICE

      i. Change oil and filter every 500 hours of operation or annually, whichever comes first,
[40 CFR Subpart ZZZZ, Table 2d, 4.a]

      ii. Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first; and
[40 CFR Subpart ZZZZ, Table 2d, 4.b]

      iii. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary. [40 CFR Subpart ZZZZ, Table 2d, 4.c]

   b. For Each Emergency Stationary SI RICE

      i. Change oil and filter every 500 hours of operation or annually, whichever comes first,
[40 CFR Subpart ZZZZ, Table 2d, 5.a]

      ii. Inspect spark plugs every 1,000 hours of operation or annually, whichever comes first; and [40 CFR Subpart ZZZZ, Table 2d, 5.b]

      iii. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary. [40 CFR Subpart ZZZZ, Table 2d, 5.c]

2. The Permittee must meet the following requirement during periods of start-up:
[40 CFR Subpart ZZZZ, Table 2d]

   Minimize the engine's time spent at idle and minimize the engine's startup time at startup to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations apply.

B. Minimizing Emissions

The Permittee must operate and maintain all applicable stationary RICE and after-treatment control device (if any) according to the manufacturer's emission-related written instructions or develop your own maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions. [40 CFR 63.6625(e)]

C. Non-Resettable Hour Meter

The Permittee must install a non-resettable hour meter (if one is not already installed) on all existing emergency stationary RICE located at an area source of HAP emissions. [40 CFR 63.6625(f)]

D. Engine Idle and Startup Time Minimization

The Permittee must minimize the engine's time spent at idle during startup and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission standards applicable to all times. [40 CFR 60.6625(h) & Table 2d to Subpart ZZZZ of Part 63]

E. Alternate Oil Change Requirement

The Permittee may utilize an oil analysis program in order to extend the specified oil change requirement in IV.A.1.a.i and IV.A.1.b.i of this Category. The oil analysis must be performed at the same frequency specified for changing the oil in IV.A.1.a.i and IV.A.1.b.i of this permit. The analysis program must at a minimum analyze the following three parameters: Total Acid Number, viscosity, and percent water content. The condemning limits for these parameters are as follows: Total Acid Number increases by more than 3.0 milligrams of potassium hydroxide (KOH) per gram from Total Acid Number of the oil when new; viscosity of the oil has changed by more than 20 percent from the viscosity of the oil when new; or percent water content (by volume) is greater than 0.5. If all of these condemning limits are not exceeded, the Permittee is not required to change the oil. If any of the limits are exceeded, the Permittee must change the oil within 2 days of receiving the results of the analysis; if the engine is not in operation when the results of the analysis are received, the Permittee must change the oil within 2 days or before commencing operation, whichever is later. The Permittee must keep records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil changes for the engine. The analysis program must be part of the maintenance plan for the engine. [40 CFR 60.6625(j)]

V. Continuous Compliance

A. General Requirements

1. The Permittee shall comply with the emission limitations, operating limitations and other requirements in this Category at all times. [40 CFR 63.6605(a)]

2. The Permittee must at all times, operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require the Permittee to make any further efforts to reduce emissions if levels required by this standard have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Control Officer which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source. [40 CFR 63.6605(b)

B. Demonstration of Continuous Compliance with the emission limitations and operating limitations. [40 CFR 63.6640]

1. The Permittee must demonstrate continuous compliance with each emission limitation, operating limitation, and other requirements in this Category according to the following work or management practices: [40 CFR 63.6640(a), Subpart ZZZZ : Table 6, 9.a]

   a. Operate and maintain the stationary RICE according to the manufacturer's emission-related operation and maintenance instructions; or [Subpart ZZZZ : Table 6, 9.a.i.]

   b. Develop and follow your own maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions. [Subpart ZZZZ : Table 6, 9.a.ii.]

2. The Permittee must report each instance in which the Permittee did not meet each emission limitation or operating limitation in this Category (Tables 2b and Table 2d in subpart ZZZZ as applicable). These instances are deviations from the emission and operating limitations in this subpart ZZZZ. These deviations must be reported according to the requirements in the Additional Permit Conditions of this Permit. If you change your catalyst, you must re-establish the values of the operating parameters measured during the initial performance test. When you re-establish the values of your operating parameters, you must also conduct a performance test to demonstrate that you are meeting the required emission limitation applicable to your stationary RICE. [40 CFR 63.6640(b)]

C. Requirements for Emergency Stationary Engines. [40 CFR 63.6640(f)]

1. The Permittee must operate the emergency stationary RICE according to the following requirements: [40 CFR 63.6640(f)(1)]

   a. There is no time limit on the use of emergency stationary RICE in emergency situations. [40 CFR 63.6640(f)(1)(i)]

   b. The Permittee may operate the emergency stationary RICE for the purpose of maintenance checks and readiness testing, provided that the tests are recommended by Federal, State or local government, the manufacturer, the vendor, or the insurance company associated with the engine. Maintenance checks and readiness testing of such units is limited to 100 hours per year. The Permittee may petition the Control Officer for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the Permittee maintains records indicating that Federal, State, or local standards require maintenance and testing of emergency RICE beyond 100 hours per year. [40 CFR 63.6640(f)(1)(ii)]

c. The Permittee may operate emergency stationary RICE up to 50 hours per year in non-emergency situations, but those 50 hours are counted towards the 100 hours per year provided for maintenance and testing. The 50 hours per year for non-emergency situations cannot be used for peak shaving or to generate income for a facility to supply power to an electric grid or otherwise supply power as part of a financial arrangement with another entity; except that the Permittee may operate the emergency engine for a maximum of 15 hours per year as part of a demand response program if the regional transmission organization or equivalent balancing authority and transmission operator has determined there are emergency conditions that could lead to a potential electrical blackout, such as unusually low frequency, equipment overload, capacity or energy deficiency, or unacceptable voltage level. The engine may not be operated for more than 30 minutes prior to the time when the emergency condition is expected to occur, and the engine operation must be terminated immediately after the facility is notified that the emergency condition is no longer imminent. The 15 hours per year of demand response operation are counted as part of the 50 hours of operation per year provided for non-emergency situations. The supply of emergency power to another entity or entities pursuant to financial arrangement is not limited by this paragraph, as long as the power provided by the financial arrangement is limited to emergency power. [40 CFR 63.6640(f)(1)(iii)]

2. Any operation other than emergency operation, maintenance and testing, and operation in non-emergency situations for 50 hours per year, as described in V.C.1.a through c of this Category, is prohibited. If the Permittee does not operate the engine according to the requirements in paragraphs V.C.1.a through c of this Category, the engine will not be considered an emergency engine under Subpart ZZZZ and will need to meet all requirements for non-emergency engines. [40 CFR 63.6640(f)(1)]

D. Notification Requirements <u>No Requirements</u>

VI. Recordkeeping Requirements

A. The Permittee must keep the records described in VI.A.1 through A.5 of this Category. [40 CFR 63.6655]

1. A copy of each notification and report that the Permittee submitted to comply with this subpart, including all documentation supporting any Initial Notification or Notification of Compliance Status that were submitted. The Permittee shall also maintain files of all information (including all reports and notifications) required by this Section recorded in a form suitable and readily available for expeditious inspection and review. The files shall be retained for at least 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. At a minimum, the most recent 2 years of data shall be retained on site. The remaining 3 years of data may be retained off site. Such files may be maintained on microfilm, on a computer, on computer floppy disks, on magnetic tape disks, or on microfiche. [40 CFR 63.6655(a), 40 CFR 63.10(b)(2)(xiv), 40 CFR 63.9 & 40 CFR 63.10(b)]

2. Records of the occurrence and duration of each malfunction of operation (*i.e.*, process equipment) or the air pollution control and monitoring equipment. [40 CFR 6655(a)(2)]

3. Records of all performance tests, performance evaluations and opacity and visible emission observations. [40 CFR 6655(a)(3) & 40 CFR 63.10(b)(2)(viii)]

4. Records of all required maintenance performed on the air pollution control and monitoring equipment. [40 CFR 6655(a)(4)]

5. Records of actions taken during periods of malfunction to minimize emissions in accordance with V.A.2 of this Category, including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation.
[40 CFR 6655(a)(5) & 40 CFR 63.6605(b)]

B. The Permittee must keep the records required in V.B of this Category to show continuous compliance with each emission or operating limitation that applies. [40 CFR 6655(d)]

C. The Permittee must keep records of the maintenance conducted on all applicable existing emergency stationary RICE in order to demonstrate that the Permittee operated and maintained the stationary RICE and after-treatment control device (if any) according to the Permittee's own maintenance plan.
[40 CFR 6655(e) & 40 CFR 6655(e)(3)]

D. The Permittee must keep records of the hours of operation of the engine that is recorded through the non-resettable hour meter. The Permittee shall document how many hours are spent for emergency operation; including what classified the operation as emergency and how many hours are spent for non-emergency operation. If the engines are used for demand response operation, the Permittee shall keep records of the notification of the emergency situation, and the time the engine was operated as part of demand response. [40 CFR 60.6655(f) & 40 CFR 6655(f)(2)]

VII. Reporting Requirements

If an emergency engine is operating during an emergency and it is not possible to shut down the engine in order to perform the management practice requirements on the schedule required in IV.A of this Category, or if performing the management practice on the required schedule would otherwise pose an unacceptable risk under Federal, State, or local law, the management practice can be delayed until the emergency is over or the unacceptable risk under Federal, State, or local law has abated. The management practice should be performed as soon as practicable after the emergency has ended or the unacceptable risk under Federal, State, or local law has abated. The Permittee must report any failure to perform the management practice on the schedule required and the Federal, State or local law under which the risk was deemed unacceptable. [Footnote 2 of Table 2 to Subpart ZZZZ of Part 63]

Category E

Material Issues - Specific Conditions

The provisions of this Category apply to all chemical purchases made by RMS for process related activities.

I. Emission Limitations and Standards

[PCC 17.12.350.A.3.a]

[Material Permit Condition]

Hazardous Air Pollutant (HAP) and Volatile Organic Compound (VOC) Emission Limitations.

The Permittee shall not have emissions that equal or exceed the following rates:

A. 9 tons or more of any single HAP or 22.5 tons or more of any combination of HAPs in any 12-consecutive month period.

B. 90 tons in any 12-consecutive month period of VOC.

II. Monitoring Requirements

[PCC 17.12.185.A.3]

A. HAPs Emissions

1. The Permittee shall demonstrate compliance with the HAP emissions limitation of I.A of this Category by maintaining the approved Monthly Hazardous Air Pollutants Emissions Report (MHAPER) emissions reporting system at all times.

2. The approved MHAPER shall account for the type and quantity of all HAPs (individual and combined) at the end of each calendar month. (An account of the individual HAPs shall not be required if the Permittee has maintained totals of combined HAPs below 10tpy). The following HAP emission operations and activities shall be evaluated:

   a. All HAP containing materials purchased for use at the facility.

   b. All HAPs emitted from fuel fired equipment combustion.

   c. Activities defined as trivial per PCC 17.04.340.A are excluded from the MHAPER.

3. The HAP content (percent by weight) of a material that is purchased for use at the facility shall be determined by one of the following methods:

   i. Safety Data Sheets (SDS). If the HAP content for a material is specified as a range of concentrations in the SDS for that material, the highest concentration specified in the range shall be used to determine the HAP content of that material; or

   ii. A manufacturer's certification of HAP content;

4. The Permittee shall assume that 100 percent of the HAPs contained in each material purchased are emitted the month the material was purchased.

5. HAPs emitted from fuel fired equipment (FFE) shall be calculated using the appropriate AP-42 emission factors or emission test data. The calculation to determine the HAPs emissions shall be determined by multiplying the AP-42 emission factor by the hours of operation and the quantity and type of fuel used by the FFE.

6. A summary table of all the above HAP calculations shall be included in the MHAPER no later than 30 calendar days following the end of the month for which the emissions are to be determined.

B. VOC Emissions [PCC 17.12.185.A.3]

1. The Permittee shall demonstrate compliance with the VOC emissions limitation in I.B of this Category by maintaining the approved Monthly Volatile Organic Compound Emissions Report (MVOCER) emissions reporting system at all times.

2. The approved MVOCER shall account for the type and quantity of all VOCs at the end of each calendar month. The following VOC emission operations and activities shall be evaluated:

   a. All VOC containing materials purchased for use at the facility.

   b. All VOCs emitted from fuel fired equipment combustion.

   c. Activities defined as trivial per PCC 17.04.340.A are excluded from the MVOCER.

3. The VOC content (percent by weight) of a material that is purchased for use at the facility shall be determined by one of the following methods:

   a. Safety Data Sheets (SDS). If the VOC content for a material is specified as a range of concentrations in the SDS for that material, the highest concentration specified in the range shall be used to determine VOC content of that material; or

   b. A manufacturer's certification of VOC content;

4. The Permittee shall assume that 100 percent of the VOCs contained in each material purchased are emitted the month the material was purchased.

5. VOCs emitted from fuel fired equipment (FFE) shall be calculated using the appropriate AP-42 emission factors or emission test data. The calculation to determine the VOC emissions shall be determined by multiplying the AP-42 emission factor by the hours of operation and the quantity and type of fuel used by, the FFE.

6. A summary table of all the above VOC calculations shall be included in the MVOCER no later than 30 calendar days following the end of the month for which the emissions are to be determined.

C. Organic Solvents and Other Organic Materials

1. The Permittee shall not transport or store HAP or VOC containing materials without taking necessary and feasible measures to control evaporation, leakage, or other discharge into the atmosphere. [PCC 17.16.400.A]

2. The Permittee shall not conduct any spray paint operation without minimizing the organic solvent emissions. Such operations other than architectural coating and spot painting shall be conducted in an enclosed area equipped with controls containing no less than 96 percent of the overspray. [PCC 17.16.400.C.1]

3. The Permittee shall not employ, apply, evaporate or dry any architectural coating containing photochemically reactive solvents for industrial or commercial purposes; or thin or dilute any architectural coating with a photochemically reactive solvent. [PCC 17.16.400.C.2.a and b]

4. For the purposes of subsection II.C.3 of this Category, a photochemically reactive solvent shall be any solvent with an aggregate of more than twenty percent of its total volume composed of the chemical compounds classified in subparagraphs a through c of this subsection (II.C.4), or which exceeds any of the following percentage composition limitations, referred to the total volume of solvent: [PCC 17.16.400.C.2.b & PCC 17.16.400.C.3]

   a. A combination of the following types of compounds having an olefinic or cyclo-olefinic type of unsaturation - hydrocarbons, alcohols, aldehydes, esters, ethers, or ketones: five percent.

   b. A combination of aromatic compounds with eight or more carbon atoms to the molecule, except ethyl benzene: eight percent.

   c. A combination of ethylbenzene, ketones having branched hydrocarbon structures, trichloroethylene or toluene: twenty percent.

5. Whenever any organic solvent or any constituent of an organic solvent may be classified from its chemical structure into more than one of the groups of organic compounds described in II.C.3.a through II.C.3.c of this Category, it shall be considered to be a member of the group having the least allowable percent of the total volume of solvents. [PCC 17.16.400.C.4]

6. The Permittee shall not emit gaseous or odorous materials from equipment, operations, or premises under his control in such quantities or concentrations as to cause air pollution. [PCC 17.16.030]

III. Recordkeeping Requirements [PCC 17.12.185.A.4]

The Permittee shall retain the following records:

A. The MHAPER as required by II.A.1 of Category.

B. A rolling 12 calendar month emissions total of individual and total HAP shall be calculated for 12 consecutive months (as required by II.A.2 of this Category). This rolling total shall be the sum of the previous twelve calendar months of emissions data and shall be generated no later than 30 calendar days following the end of the month for which the emissions are to be determined.

C. The MVOCER as required by paragraph II.B.1 of this Category.

D. A rolling 12-calendar month VOC emissions total (as required by II.B.2 of this Category) using the data maintained in the MVOCER. This rolling total shall be the sum of the previous twelve calendar months of emissions data and shall be generated no later than 30 calendar days following the end of the month for which the emissions are to be determined.

E. When requested by the Control Officer, the Permittee shall demonstrate compliance with the overspray control requirement in II.C.2 of this Category by making available to the Control Officer, the filter specification records of each paint spray booth exhaust system that confirm compliance to the applicable standard.

F. When requested by the Control Officer, the Permittee shall demonstrate compliance with the architectural coating evaporation and drying, VOC limitation, in II.C.3 of this Category, by making available to the Control Officer the material safety data sheet(s) or equivalent documentation for the product(s) used in each architectural surface coating operation that confirm compliance to the applicable standard.

G. Records shall be retained on-site by the Permittee for at least five years from the date of generation and shall be made available for review upon the Control Officer's request.

IV. Reporting Requirements [PCC 17.12.185.A.5]

The Permittee shall fulfill all reporting requirements outlined in the Additional Permit Requirements of this air quality permit.

V. Facility Changes

A. The Permittee may implement HAP containing material changes that reduces and/or maintains air emissions at the HAP permitted emission limit in I.A of this Category provided that the proposed equipment changes do not trigger the applicability of a federally enforceable condition.

B. The Permittee may implement VOC containing material changes that reduces and/or maintains air emissions at the VOC permitted emission limit in I.B of this Category provided that the proposed equipment changes do not trigger the applicability of a federally enforceable condition.

C. Modifications to existing and/ or installations of new equipment (including, but not limited to, usage of fuels not specified within this permit) that increase the VOC emissions above the emission limitations in this permit, shall require a significant permit revision.

D. Unless otherwise specified in V.A and/ or V.B of this Category, the Permittee shall submit the required notification and follow the required permit revision procedures pursuant to PCC 17.12.240, PCC 17.12.255.B or PCC 17.12.260.

E. Prior to making any modification to the MHAPER or MVOCER, the Permittee shall submit written notification of the proposed report changes to the Control Officer. Such notification shall include details of the proposed modification and the reason for the modification. The proposed modification cannot be made without prior approval by the Control Officer. Changes in report form or format or other changes which would not affect the approved methods for calculating emissions shall not require notification.

VI. Testing Requirements [PCC 17.20.010]

For purposes of demonstrating compliance, these test methods shall be used, provided that for the purpose of establishing whether or not the facility has violated or is in violation of any provision of this permit, nothing in this permit shall preclude the use, including the exclusive use, of any credible evidence or information relevant to whether a facility would have been in compliance with applicable federal requirements if the appropriate performance or compliance procedures or methods had been performed.

A. Odor Testing

Testing for odors at the facility to determine compliance with the standard in II.C.6 of this Category is not normally necessary because the use of good modern practices prevents the emission of odors beyond the property boundary. The Control Officer may require the Permittee to test for odor emissions if the Control Officer has reasonable cause to believe a violation of a standard has been committed.

B. Alternative Test Method

The Permittee may submit an alternate and equivalent test method(s) that is listed in 40 CFR Subpart 60, Appendix A, to the Control Officer in a test plan, for approval by the Control Officer. [PCC 17.12.045.D]

Category F

Facility Wide - Specific Conditions

Unless otherwise specified, the provisions of this Category apply to all other operations and equipment specifically listed in Table 8 of Attachment 2 (Non-NSPS equipment).

I. Conditions for Boilers and Evaporators

A. Emission Limitations and Standards

1. Opacity Standard

The Permittee shall not cause or permit the effluent from any boiler or evaporator to have an average optical density equal to or greater than twenty percent (20%) opacity. [PCC 17.16.040.A]

2. Fuel Limitation

a. The Permittee shall burn only the specified fuel allowed for the boiler(s) and evaporator(s) in Table 8 of Attachment 2. [PCC 17.12.190.B]

[Federally Enforceable & Material Permit Condition]

b. The Permittee shall not use high sulfur oil (fuel sulfur content >0.90% by weight) as a fuel unless the Permittee demonstrates to the satisfaction of the Control Officer that sufficient quantities of low sulfur oil are not available for use by the source and that it has adequate facilities and contingency plans to insure that the sulfur dioxide ambient air quality standards set forth in PCC 17.08.020 will not be violated. [PCC 17.16.165.G]

B. Monitoring Requirements

1. Opacity Monitoring

A demonstration to show compliance with the emission limitation for opacity in I.A of this Category shall not be required since the percent of opacity of visible emissions while combusting natural gas is inherently low (less than 20% - Title 17 opacity standards). The Permittee shall operate and maintain the boilers and evaporators at all times - including periods of startup, shutdown, and malfunction - in a manner consistent with good air pollution control practices and consistent with manufacturer's guidelines. [PCC 17.12.185.A.3]

2. Fuel Limitation

The Permittee shall be considered in compliance with the fuel limitation in I.A.2 of this Category by demonstrating that each boiler and evaporator was fired only by the specified fuel allowed as listed in Table 8, of Attachment 2. Such a demonstration may be made by making available to the Control Officer for his inspection, documentation, such as invoices or statements from the fuel supplier, showing that only the specified fuel was purchased for use in the equipment. Alternatively, the demonstration may be made by actual inspection of the equipment showing that the specified fuel is the only fuel supply plumbed to the equipment for firing. [PCC 17.12.185.A.3]

II. Additional Conditions for All NSPS and Non NSPS Generators and Boilers

Recordkeeping Requirements [PCC 17.12.185.A.4]

A. Opacity Checks

No Requirements

B. Onsite Records

All boiler and evaporator maintenance records shall be retained on-site by the Permittee for at least five years from the date of generation and shall be made available for review upon the Control Officer's request.

III. Facility Changes

Should the Permittee desire to change the facility or operations in any way (including, but not limited to, addition of new equipment, modification of current equipment or usage of fuels not specified within this permit), the Permittee shall first submit the proper notifications and follow the required permit revision procedure pursuant to PCC 17.12.230, PCC 17.12.255, or PCC 17.12.260.

IV. Testing Requirements

For purposes of demonstrating compliance, these test methods shall be used, provided that for the purpose of establishing whether or not the facility has violated or is in violation of any provision of this permit, nothing in this permit shall preclude the use, including the exclusive use, of any credible evidence or information relevant to whether a facility would have been in compliance with applicable federal requirements if the appropriate performance or compliance procedures or methods had been performed. [PCC 17.20.010]

A. Opacity

No Requirements

B. Fuel Limitation

When required the Permittee need only demonstrate that pipeline quality natural gas was fired exclusively since the sulfur content of pipeline quality natural gas is regulated by the Federal Energy Regulatory Commission. [PCC 17.12.185.A.3 & PCC 17.20.010]

Additional Permit Requirements

I. Compliance with Permit Conditions [PCC 17.12.185.A.7.a & b]

A. The Permittee shall comply with all conditions of this permit including all applicable requirements of Arizona air quality statutes and the air quality rules. Any permit noncompliance constitutes a violation of the Arizona Revised Statutes and is grounds for enforcement action; for permit termination, revocation and reissuance, or revision; or for denial of a permit renewal application. In addition, noncompliance with any federally enforceable requirement constitutes a violation of the Clean Air Act.

B. The Permittee shall report to the Control Officer any emissions in excess of the limits established by this permit. The report shall be in 2 parts as specified below: [PCC 17.12.185.A.5 & PCC 17.12.040]

1 Notification by telephone or facsimile within 24 hours of the time the Permittee first learned of the occurrence of excess emission that includes all available information pursuant to PCC 17.12.040.B. To report excess emissions call **520-724-7400** or fax to **520-838-7432.**

2. Detailed written notification by submission of an excess emissions report within 72 hours of the notification in I.B.1 above. **Send to PDEQ 33 N Stone Avenue, Suite 700, Tucson, Arizona 85701.**

C. It shall not be a defense for a Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

D. The permit does not convey any property rights of any sort, or any exclusive privilege to the permit holder.

E. The Permittee shall pay fees to the Control Officer pursuant to PCC 17.12.510.
[PCC 17.12.185.A.9 & PCC 17.12.510]

II. Permit Revision, Reopening, Revocation and Reissuance, or Termination for Cause [PCC 17.12.185.A.7.c]

The permit may be revised, reopened, revoked and reissued, or terminated for cause pursuant to PCC 17.12.270. The filing of a request by the Permittee for a permit revision, revocation and reissuance, or termination; or of a notification of planned changes or anticipated noncompliance does not stay any permit condition.

III. Duty to Provide Information [PCC 17.12.165.G & PCC 17.12.185.A.7.e]

A. The Permittee shall furnish to the Control Officer, within a reasonable time, any information that the Control Officer may request in writing to determine whether cause exists for revising, revoking and reissuing, or terminating the permit or to determine compliance with the permit. Upon request, the Permittee shall also furnish to the Control Officer copies of records required to be kept by the permit. For information claimed to be confidential, the Permittee shall furnish a copy of such records to the Control Officer along with a claim of confidentiality.

B. If the Permittee has failed to submit any relevant facts or if the Permittee has submitted incorrect information in the permit application, the Permittee shall, upon becoming aware of such failure or incorrect submittal, promptly submit such supplementary facts or corrected information.

IV. Severability Clause [PCC 17.12.185.A.6]

The provisions of this permit are severable. If any provision of this permit is held invalid, the remainder of this permit shall not be affected thereby.

Attachment 1

Applicable Regulations

Requirements Specifically Identified as Applicable:

Code of Federal regulations (CFR):

40 CFR Part 60 Subpart IIII: New Source Performance Standards (NSPS) for Stationary Compression Ignition Internal Combustion Engines (Non-Fire Pump and Fire Pump Engines)

40 CFR 60.4203, 40 CFR 60.4204(a) & Table 1 of Subpart IIII, 40 CFR 60.4206, 60.4211(a), 40 CFR 60.4207(b) & 40 CFR 80.510(b), 40 CFR 60.4207(c), 40 CFR 60.4208,40 CFR 60.4208(a), 40 CFR 60.4208(b), 40 CFR 60.4208(c), 40 CFR 60.4208(d), 40 CFR 60.4208(e), 40 CFR 60.4208(f), 40 CFR 60.4208(g) & (h), 40 CFR 60.4211, 40 CFR 60.4211(a), PCC 17.12.180.A.2, PCC 17.12.180.A.4, 40 CFR 60.4214 (a)(1) and PCC 17.12.180.A.5, 40 CFR 60.4212 and PCC 17.12.180.A.3.a, 40 CFR 60.4218 & 40 CFR 60.4214(b), PCC 17.12.180.A.4.

40 CFR 60.4200(a)(2)(ii), PCC 17.12.185.A.2, 40 CFR 60.4203, 4205(c), & Table 4, 40 CFR 60.4206, 40 CFR 60.4207, 40 CFR 60.4207(b) & 40 CFR 80.510(b), 40 CFR 60.4211(f), 40 CFR 60.4211, 40 CFR 60.4211(a), 40 CFR 60.4211(b) & Table 3, 40 CFR 60.4211(c), PCC 17.12.185.A.3.d, PCC 17.12.185.A.4, 40 CFR 60.4214(b), 40 CFR 60.4212 & PCC 17.12.185.A.3.a, 40 CFR 60.4218 & 40 CFR 60.4214(b), PCC 17.12.185.A.4.

40 CFR Part 60 Subpart JJJJ: New Source Performance Standards (NSPS) for Stationary Spark Ignition Internal Combustion Engines

40 CFR 60.4233(e), 40 CFR 60.4234, 40 CFR 60.4236, 40 CFR 60.4243, 40 CFR 60.4243(d), 40 CFR 60.4243(e), 40 CFR 60.4243(f), 40 CFR 60.4243(g), 40 CFR 60.4245(a), 40 CFR 60.4245(d), 40 CFR 60.4246.

40 CFR Part 63 Subpart ZZZZ: Reciprocating Internal Combustion Engines (Located at Area Sources of HAP, Constructed Before June 12, 2006)

Existing Stationary Emergency Compression Ignition Engines >500HP
Existing Stationary Emergency Compression Ignition Engines <500HP
Existing Stationary Emergency Spark Ignition Engines ≤500HP

40 CFR 63.6585, 40 CFR 63.6595(a), 40 CFR 63.6603(a), Table 2d, Table 2b, Table 4.a, Table 4.b, Table 4.c, Table 5.a, 40 CFR 63.6625(e), 40 CFR 63.6625(f), 40 CFR 63.6625(h), 40 CFR 63.66259(j), 40 CFR 63.6605(a), 40 CFR 63.6605(b), 40 CFR 63.6640, 40 CFR 63.6640(a), Table 6, Table 9.a, Table 9.a.i, Table 9.a.ii., 40 CFR 63.6640(b), 40 CFR 63.6640(f), 40 CFR 63.6640(f)(1), 40 CFR 63.6640(f)(1)(i), 40 CFR 63.6640(f)(1)(iii), 40 CFR 63.6655, 40 CFR 63.6655(a), 40 CFR 63.10(b)(2)(xiv), 40 CFR 63.9, 40 CFR 63.10(b), 40 CFR 6655(a)(2), 40 CFR 6655(a)(3), 40 CFR 63.10(b)(2)(viii), 40 CFR 6655(a)(4), 40 CFR 6655(a)(5), 40 CFR 63.6605(b), 40 CFR 6655(d), 40 CFR 6655(e), 40 CFR 6655(e)(3), 40 CFR 60.6655(f), 40 CFR 6655(f)(2), Footnote 2 of Table 2.

Pima County Code (PCC) Title 17, Chapters:

17.16.040	Standards and Applicability (Includes NESHAP)
17.16.050	Visibility Limiting Standard
17.16.165	Standards of Performance for Fossil-Fuel Fired Industrial and Commercial Equipment
17.16.340	Standards of Performance for Stationary Rotating Machinery
17.16.400	Organic Solvents and Other Organic Materials
17.20.010	Source Sampling, Monitoring, and Testing

Attachment 2

Equipment List

Table 1: NSPS Compression Ignition Internal Combustion Engines

BLDG	Type of Equipment	Equipment ID	Primary Fuel	Manufacture	Model	Serial Number	Maximum Rated Capacity (hp)	Displacement (Liters / Cylinder)	Engine Category[1]	Model year/ Applicability Date[2]
805	Emergency Generator	21984183	Diesel	Cummins	DQGAB	G070082431	2220	3.14	1	2007
807	Emergency Generator	24621475	Diesel	Generac	SD600	1231309	804	1.83	1	2010
809(1)	Emergency Generator	24657265	Diesel	Generac	SD600	2107901	2414	1.83	1	2010
809(2)	Emergency Generator	24657369	Diesel	Generac	SD600	2107898	2414	1.83	1	2010
809(3)	Emergency Generator	24657377	Diesel	Generac	SD600	2107900	2414	1.83	1	2010
809(4)	Emergency Generator	31115444	Diesel	Generac	MD600	9255320	805	3.02	1	2014
814	Emergency Generator	22333812	Diesel	Cummins	DQFAB	B090232591	1490	2.54	1	Jan 2009
828	Emergency Generator	24966973	Diesel	Generac	SD 500	2108498	671	1.83	1	2010
842	Emergency Generator	20293100	Diesel	Cummins	DQDAC-5769658	I060967229	433	1.48	1	2007
842	Emergency Generator	TBD	Diesel	Cummins	DFEK-1330092	F130525896	670	2.48	1	Dec 2012
843	Emergency Generator	20724388	Diesel	Cummins	DFEK-5860509	E070065431	732	2.48	1	May 2007
847	Emergency Generator	20758522	Diesel	Cummins	DFLE-5754276	H06962805	2,220	3.14	1	Aug 2006

Table 1: NSPS Compression Ignition Internal Combustion Engines (continued)

BLDG	Type of Equipment	Equipment ID	Primary Fuel	Manufacture	Model	Serial Number	Maximum Rated Capacity (hp)	Displacement (Liters / Cylinder)	Engine Category[1]	Model year/ Applicability Date[2]
M05	Emergency Generator	22212440	Diesel	Cummins	DQHAB	L080224180	470	1.80	1	Nov 2008
M06-A	Emergency Generator	29660377	Diesel	Caterpillar	C-15	C5E03934	762	2.53	1	2013
M06-B	Emergency Generator	29660376	Diesel	Caterpillar	C-15	C5E003788	762	2.53	1	2013
917	Emergency Generator	DC1	Diesel	Generac	MD1000	S12H-Y2PTAW-1	1341	3.09	1	2016
917	Emergency Generator	DC2	Diesel	Generac	MD1000	S12H-Y2PTAW-1	1341	3.09	1	2016
831A	Fire Pump Engine	Pump #1	Diesel	John Deere	JU4H-UFADY8	PE4045L226150	157	1.12	1	Aug 2012
831A	Fire Pump Engine	Pump #2	Diesel	John Deere	JU4H-UFADY8	PE4045L224045	157	1.12	1	Aug 2012

[1] Category 1 Engines (Power >37 kW and Displacement <5.0 liters /cylinder)
[2] The most recent date of order, manufacture, reconstruction, or modification

Table 2: Supplemental NSPS Compression Ignition Internal Combustion Engines Requirements

BLDG	Emergency Generator (hp)[kW]	Serial Number	NO_X (g/kW-hr)	NMHC (g/kW-hr)	NMHC+NOx (g/hp-hr)	CO (g/hp-hr)	PM (g/hp-hr)	Useful Life Period
805	(2220) [1655]	G070082431			6.4	3.5	0.2	10 yrs or 8,000 hrs of operation, whichever comes first
807	(804) [600]	1231309	--	--	5.3	0.9	0.13	
809(1)	(2414) [1800]	2107901	--	--	5.3	0.9	0.13	
809(2)	(2414) [1800]	2107898	--	--	5.3	0.9	0.13	
809(3)	(2414) [1800]	2107900	--	--	5.3	0.9	0.13	
809(4)	(805)[600]	9255320	--	--	4.8	2.6	0.15	
814	(1490) [1111]	B090232591	--	--	6.4	3.5	0.2	
828	(671) [500]	2108498	--	--	5.8	1.1	0.16	
842	(433) [322]	I060967229	--	--	4.0	3.5	0.2	
843	(732) [546]	E070065431	--	--	4.0	3.5	0.2	
847	(2,220) [1655]	H06962805	--	--	6.4	3.5	0.2	

Exhaust emission standards taken from 40 CFR 89.112 (a) Table 1.
Useful life period pursuant to 40 CFR 60.4219 'Definition of useful life'. Specifically 40 CFR 1039.101(g) and 40 CFR 94.9(a).

Table 2: Supplemental NSPS Compression Ignition Internal Combustion Engines Requirements (continued)

BLDG	Emergency Generator (hp)[kW]	Serial Number	NO_X (g/kW-hr)	NMHC (g/kW-hr)	NMHC+NOx (g/hp-hr)	CO (g/hp-hr)	PM (g/hp-hr)	Useful Life Period
M05	(470) [350]	L080224180	--	--	4.0	3.5	0.2	10 yrs or 8,000 hrs of operation, whichever comes first
M06-A	(762)[568]	C5E03934			4.8	2.6	0.15	
M06-B	(762)[568]	C5E003788			4.8	2.6	0.15	
917	(1341) [1000]	S12H-Y2PTAW-1	--	--	4.8	2.6	0.15	
917	(1341) [1000]	S12H-Y2PTAW-1	--	--	4.8	2.6	0.15	

Exhaust emission standards taken from 40 CFR 89.112 (a) Table 1.
Useful life period pursuant to 40 CFR 60.4219 'Definition of useful life'. Specifically 40 CFR 1039.101(g) and 40 CFR 94.9(a).

Supplemental NSPS Compression Ignition Internal Combustion Engines Requirements (Fire Pump Engines)

Maximum engine power	Model year(s)	NMHC + NO_X g/kW/-hr (g/hp/hr)	CO g/kW/-hr (g/hp/hr)	PM g/kW/-hr (g/hp/hr)	Maximum engine power kW
$75 \leq kW < 130$ ($100 \leq HP < 175$)	>2010	4.0 (3.0)		0.30 (0.22)	117

Table 3 NSPS Spark Ignition Internal Combustion Engines

BLDG	Type of Equipment	Equipment ID	Primary Fuel	Manufacture	Model	Serial Number	Maximum Rated Capacity (hp)	Date of Manufacturer
810/801	Emergency Generator	24739807	Natural Gas	Generac	SG150	2108205	210	2010
826	Emergency Generator	24733401	Natural Gas	Generac	SG035	2108202	47	2010
840	Emergency Generator	24365423	Natural Gas	Generac	SG300	2104187	454	2009
848	Emergency Generator	25956153	Natural Gas	Generac	SG150	2113085	201	2011
849	Emergency Generator	24709186	Natural Gas	Generac	SG035	2108201	47	2010
850	Emergency Generator	24071374	Natural Gas	Generac	SG300	2104064	454	2009
851	Emergency Generator	23699517	Natural Gas	Generac	SG080	2104689	128	2009

Table 4 RICE NESHAP for Emergency Compression Ignition Internal Combustion Engines

(Compliance Date May 3, 2013)

(Existing Stationary Engine >500HP Located at Area Sources of HAP, constructed before June 12, 2006)

BLDG	Type of Equipment	Equipment ID	Primary Fuel	Manufacture	Model	Serial Number	Maximum Rated Capacity (hp)	Date of Manufacturer
801	Emergency Generator	10002533	Diesel	Caterpillar	SR4B-GD 3512C	G6J00486 CAT3512CHSBG00791	1,800 HP	1988

Table 5 RICE NESHAP for Emergency Compression Ignition Internal Combustion Engines

(Compliance Date May 3, 2013)

(Existing Stationary Engine <500HP Located at Area Sources of HAP, constructed before June 12, 2006)

BLDG	Type of Equipment	Equipment ID	Primary Fuel	Manufacture	Model	Serial Number	Maximum Rated Capacity (hp)	Date of Manufacturer
805	Emergency Generator	10009084	Diesel	Onan-Cummins	LTA10-G1	J040700336	350 HP	2004
836	Emergency Generator	19361013	Diesel	Onan-Cummins	DFCB	H050823268	465	2005
845	Emergency Generator	10003915	Diesel	Onan	DGCA4478867	C000084143	102 HP	2000
861	Emergency Generator	10005966	Diesel	Cummins	DKAF-5003888 Spec C	K010304108	100 HP	2001

Table 6 RICE NESHAP for Emergency Spark Ignition Internal Combustion Engines

(Compliance Date October 19, 2013)

(Existing Stationary Engine ≤500HP Located at Area Sources of HAP, constructed before June 12, 2006)

BLDG	Type of Equipment	Equipment ID	Primary Fuel	Manufacture	Model	Serial Number	Maximum Rated Capacity (hp)	Date of Manufacturer
801	Emergency Generator	10010273	Natural Gas	Cummins	G855	25150043	220 HP	1987
801	Emergency Generator	10010283	Natural Gas	Cummins	G855	28150042	220 HP	1987
803	Emergency Generator	10002696	Natural Gas	Onan	60ENL31587E	C890223276	80 HP	1989
808	Emergency Generator	19525490	Natural Gas	Generac	GTA28	2081247	450 HP	2005
833	Emergency Generator	19824152	Natural Gas	Generac	QT055	4491248	50 HP	2006
847	Emergency Generator	10004073	Natural Gas	Onan	GGFD5636000	K0303572092	250 HP	2004
848	Emergency Generator	10008594	Natural Gas	Cummins	WSG-1068	G030518940	210 HP	2003

Table 7: Standards of Performance for Fuel Fired Equipment

BLDG	Type of Equipment	Equipment ID	Primary Fuel	Manufacturer	Model	Serial Number	Rated Capacity (Btu/hr)*	Date of Manufacturer
800	Boiler	20574158	Natural Gas	Rite	225 W	29978	2,250,000	2007
801	Boiler	10010514	Natural Gas	Raypak	H1083ABCAHCCA	1289108989	1,083,000	1989
801	Boiler	10010515	Natural Gas	Raypak	H1083ABCAHCCA	1289108990	1,083,000	1989
802	Boiler	19872547	Natural Gas	Raypak	H911262AE	0602247505	1,096,000	2000
802	Boiler	10008452	Natural Gas	Raypak	H9-1262	0001176405	1,260,000	2003
803	Boiler	10005982	Natural Gas	Raypak	601600 0040	0010175900	1,058,000	2002
807	Boiler	10003814	Natural Gas	Parker	T1460	961136	1,460,000	1999
814	Oven	10003150	Natural Gas	Oven Systems Inc.	800 KBTU	4001	800,000	1994
814	Oven	10003149	Natural Gas	Oven Systems Inc.	800 KBTU	4001	800,000	1994
814	Evaporator	10001150	Natural Gas	PSI Water Systems, Inc.	N66AB165	36529	1,740,000	2003
814	Evaporator	10001149	Natural Gas	PSI Water Systems, Inc.	N66AB165	36530	1,740,000	2003
828	Boiler	25675816	Natural Gas	Rite	W135	31015	1,350000	2011

- Maximum rated capacity in Btu/hr, unless otherwise specifically stated.

Table 8: Standards of Performance for Fuel Fired Equipment (continued)

BLDG	Type of Equipment	Equipment ID	Primary Fuel	Manufacturer	Model	Serial Number	Rated Capacity (Btu/hr)*	Date of Manufacturer
842	Boiler	10011318	Natural Gas	Raypak	H21758ABEBHCCA	9403113781	1,758,000	1994
842	Boiler	21018630	Natural Gas	Raypak	H21758ABEBHCCA	712275359	1,758,000	2007
843	Boiler	10011321	Natural Gas	Raypak	H21758AHEBHCAA	9401113085	1,758,000	1994
843	Boiler	10011320	Natural Gas	Raypak	H21758AHEBHCAA	9401113086	1,758,000	1994
847	Boiler	10005010	Natural Gas	Rite	W-105 WE	27185	1,050,000	1999
847	Boiler	10005016	Natural Gas	Rite	W105 S	27004	1,050,000	Unknown
847	Boiler	10004077	Natural Gas	Rite	W250 W	29165	2,500,000	2004
848	Boiler	10008616	Natural Gas	Rite	225 W	28846	2,250,000	2003
848	Boiler	10008617	Natural Gas	Rite	225 W	28845	2,250,000	2003
848	Boiler	23740885	Natural Gas	Rite	W135W	30820	1,350,000	2009
849	Boiler	10011408	Natural Gas	Raypak	H3-1125A-BECRCAA	9403113738	1,124,700	1994
864	Boiler	10011946	Natural Gas	Parker Boiler Co.	T3900	50420	3,900,000	1999
864	Boiler	10008582	Natural Gas	Parker Boiler Inc.	T6800L	51781	6,800,000	2000

- Maximum rated capacity in Btu/hr, unless otherwise specifically stated.

Table 8: Standards of Performance for Fuel Fired Equipment (continued)

BLDG	Type of Equipment	Equipment ID	Primary Fuel	Manufacturer	Model	Serial Number	Rated Capacity (Btu/hr)*	Date of Manufacturer
814	Boiler	32652337	Natural Gas	Parker Boiler Co.	T2160	62581	2,160,000	2016
814	Boiler	32652336	Natural Gas	Parker Boiler Co.	T2160	62586	2,160,000	2016
809	Boiler	32652327	Natural Gas	Cleaver Brooks	Clearfire H	16021002510018	1,020,000	2016
809	Boiler	32652325	Natural Gas	Cleaver Brooks	Clearfire H	16021002510019	1,020,000	2016
809	Boiler	32652323	Natural Gas	Cleaver Brooks	Clearfire H	16021002510017	1,020,000	2016