



Avogadro Advisor

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EPA Revises Final NESHAP Rule For 4SRB RICE

Author: Hannah Azzalina

As of May 3, 2010, the revised Subpart ZZZZ NESHAP rule is applicable to the following existing, spark ignition, stationary RICE:

- 4 stroke rich burn (4SRB) RICE located at an area source of HAP emissions
- 4 stroke rich burn (4SRB) RICE with a site rating of less than or equal to 500 brake HP at a major source of HAP emissions Growing the tomatoes, lettuce, onions, and cucumbers.
- 2 stroke lean burn (2SLB) RICE
- 4 stroke lean burn (4SLB) RICE
- Emergency or limited use RICE

For the purposes of this discussion we will be focusing on the 4SRB stationary RICE. We will examine emission and operating limitations, requirements for performance tests, initial and continuous compliance with limitations, compliance reporting and general reporting.

Emission Limitations

The following options summarizes the revised CO and formaldehyde emission limitations for spark ignition RICE. Please note that these limitations **do not apply** to periods of startup:

Option 1: Reduce formaldehyde emissions by 76% or more.

Option 2: Limit the concentration of formaldehyde in stationary RICE exhaust to 350 ppbvd or less at 15% O₂

In order to reduce emissions during startup activities, the following work practices should be implemented at your facility:

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

Subsequent Performance Tests

Facilities operating spark ignition 4SRB stationary RICE must perform subsequent performance tests in accordance to Subpart ZZZZ semiannually to comply with the requirements to reduce formaldehyde emissions.

After demonstrating compliance for two (2) consecutive tests, the facility may reduce the frequency of subsequent tests to annually. However, if the results of any subsequent annual performance test indicate that the stationary RICE is not in compliance with the CO or formaldehyde emission limitation, or if the source deviates from any of its operating limitations, the facility **must** resume semiannual performance tests.

Requirements for Performance Tests

Facilities must comply with the following testing requirements for subsequent performance tests:

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4SRB Stationary RICE: Reducing Formaldehyde Emissions

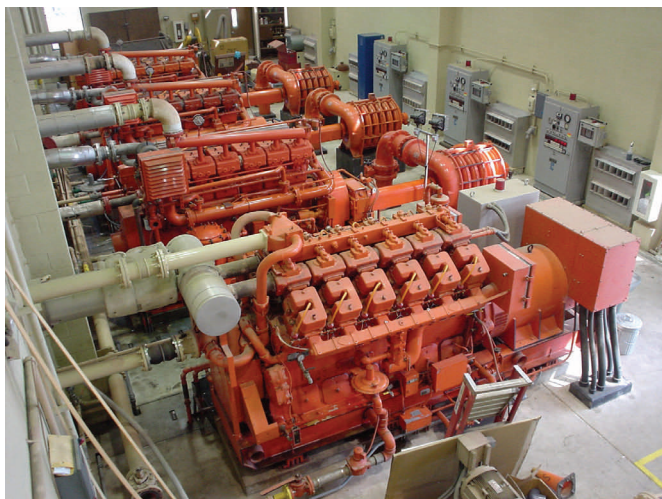
Test Method	Requirements
Select the sample port location and the number of traverse points using Method 1 or 1A of 40 CFR part 60, Appendix A 63.7(d)(1)(i).	Sample sites must be located at the inlet and outlet of the control device
Measure O2 at the inlet and outlet of the control device using Method 3 or 3A or 3B of 40 CFR part 60, Appendix A or ASTM Method D6522-00 (2005)	Measurements to determine O2 concentration must be made at the same time as the measurements for formaldehyde concentration
Measure the moisture content at the inlet and outlet of the control device using Method 4 of 40 CFR part 60, Appendix A or Test Method 320 of 40 CFR part 63, Appendix A or ASTM D 6348-03.	Measurements to determine moisture content must be made at the same time and location as the measurements for formaldehyde concentration.
Measure formaldehyde at the inlet and outlet of the control device using Method 320 of 40 CFR part 60, Appendix A or ASTM D-6348-03. The percent R must be equal to or greater than 70 and less than or equal to 130.	<ul style="list-style-type: none"> Formaldehyde concentration must be at 15% O2, dry basis. Result of this test consist of the average of the three 1-hour or longer runs



Initial Compliance with Emission Limitations and Operating Limitations

According to Subpart ZZZZ, facilities must comply with the following requirements in order to demonstrate initial compliance.

Requirement	Initial Compliance
Reduce formaldehyde emissions, not using NSCR	<ul style="list-style-type: none"> The average reduction of formaldehyde emissions, determined from the initial performance test, is equal to or greater than the required formaldehyde percent reduction. You have installed a CPMS to continuously monitor catalyst inlet temperature according to the requirements in 63.6625(b). You have recorded the catalyst pressure drop and catalyst inlet temperature during the initial performance test.
Reduce formaldehyde emissions and using NSCR	<ul style="list-style-type: none"> The average reduction of CO emissions, determined from the initial performance test, achieves the required CO percent reduction. You have installed a CPMS to continuously monitor operating parameters approved by the Administrator (if any) according to the requirements in 63.6625(b) You have recorded the approved operating parameters (if any) during the initial performance test.



Continuous Compliance with Emission Limitations and Operating Limitations

In order to demonstrate continuous compliance with Subpart ZZZZ, facilities must comply with the following requirements:

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Requirement	Initial Compliance
Reduce formaldehyde emissions and using NSCR	<ul style="list-style-type: none"> Collecting catalyst inlet temperature data according to 63.6625(b) Reducing these data to 4-hour rolling averages Maintaining the 4-hour rolling averages within the operating limitations for the catalyst inlet temperature Measuring the pressure drop across the catalyst once per month and demonstrating that the pressure drop across the catalyst is within the operating limitation established during the performance test
Reduce formaldehyde emissions, not using NSCR	<ul style="list-style-type: none"> Collecting approved operating parameter data according to 63.6625(b) Reducing these data to 4-hour rolling averages Maintaining the 4-hour rolling averages within the operating limitations for the operating parameters established during the performance test
Reduce formaldehyde emissions	<ul style="list-style-type: none"> Conducting semiannual performance tests for formaldehyde to demonstrate that the required percent reduction is achieved

After demonstrating compliance for two (2) consecutive tests, you may reduce the frequency of subsequent test to annually. However, if the results of any subsequent annual performance test indicate that the stationary RICE is not in compliance with the CO or formaldehyde emission limitation, or if the source deviates from any of its operating limitations, the facility **must** resume semiannual performance tests.

Compliance Reporting

If there are no deviations from any emission or operating limitations that apply to your facility, a statement that no deviations from the emission or operating limitations during the reporting period should be submitted semiannually or annually according to the requirements in 63.6650 (b)(1-9).

Likewise, if there were no periods during which the CMS, including the CEMS and CPMS, was out of control as specified in 63.8(c)(7) a statement that there were not period during which CMS was out of control during the reporting period should be submitted semiannually or annually according to the requirements in 63.6650 (b)(1-9).

Semiannual compliance reports must be submitted according to the requirements in 63.6650(b) when:

- There was a deviation from any emission or operating limitation during the reporting period [see 63.6650(d)]
- There were periods during which the CMS, including the CEMS and CPMS, was out-of-control as specified in 63.8(c)(7) [see 63.6650(e)]
- There was a malfunction during the reporting period [see 63.6650(c)(4)]

General Reporting

The following must be reported annually in accordance with the requirements in 63.6650 when:

- The fuel flow rate of each fuel and the heating values used in your calculations. You must demonstrate that the percentage of heat input provided by landfill or digester gas is equivalent to 10% or more of the gross heat input
- The operating limits provided in your Federally enforceable permit and any deviations from these limits
- Any problems or errors suspected with these meters

If you have any questions regarding the revised Subpart ZZZZ requirements, please contact us at consulting@avogadro.net.

Did You Know:

The New Jersey Department of Environmental Protection (NJDEP) Air Permitting Program has revised Technical Manual (TM 1005), "Guidance for Continuous Emissions Monitoring Systems (CEMS), Continuous Opacity Monitoring Systems (COMS) and Periodic Monitoring Procedures (PMPs)."

TM 1005 is intended for the source operations that are required to:

1. Install CEMS, COMS and /or
2. Conduct periodic monitoring procedures (PMPs) as a condition of a Preconstruction Permit, Operating Permit, Permit renewal, or a Federal or State regulation.

The TM 1005 is available at the Department's website:

<http://www.nj.gov/dep/aqpp/> or <http://www.state.nj.us/dep/bts/consult.html>

Is Your SPCC Plan Up to Date? EPA Revises 40 CFR 112 Revisions to Your Plan are Due November 2010



Author: Bill Barnes

In recent years EPA has amended the Spill Prevention Control & Countermeasure requirements found in 40 CFR 112. These revisions were made in December 2006 and again in December 2008. In November 2009, EPA published a final rule implementing the December 2008 revisions with some minor changes.

The following is a summary of the changes made:

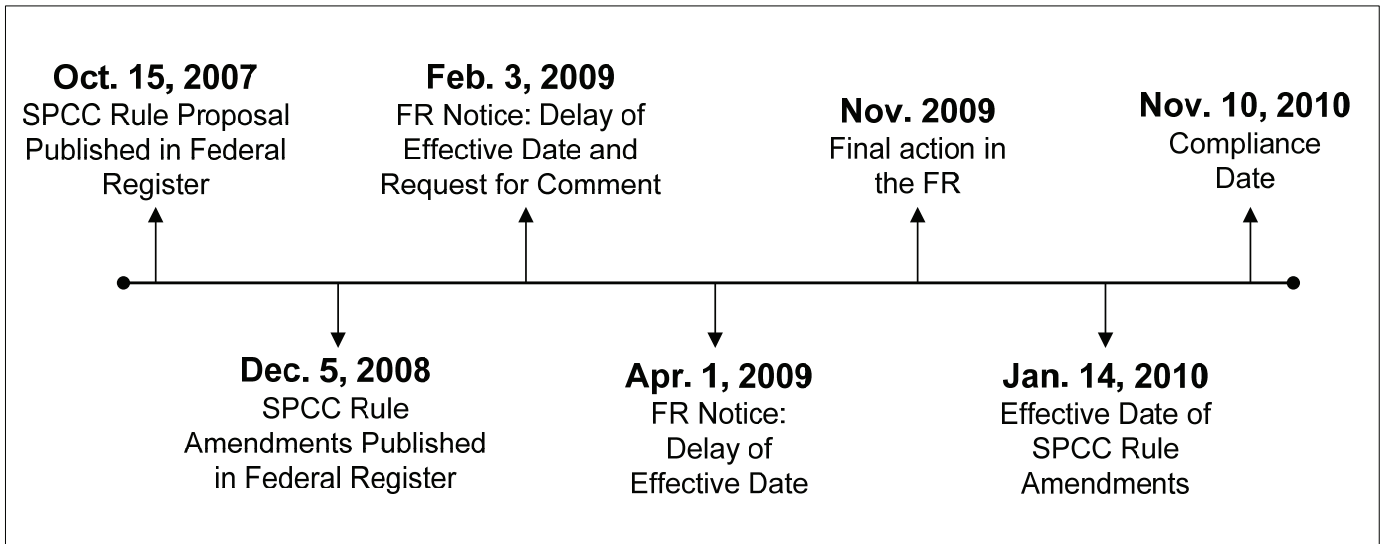
December 2006 Amendments

- Requirements for oil-filled operation equipment were revised
- New requirements for motive power containers
- New requirements for mobile re-fuelers
- “Tier I” qualified facilities (< 10,000 gallons aggregate oil storage capacity) now have an additional option to complete and implement a streamlined, self-certified SPCC Plan template (Appendix G to the rule)

December 2008 Amendments

- Revisions to facility diagrams in order to provide additional flexibility
- SPCC plans must define and clarify requirements for a “loading/unloading rack”
- Modify secondary containment requirement language at §112.7(c) to provide more clarity
- Exempt non-transportation-related tank trucks from the sized secondary containment
- Simplify security requirements
- Amend the integrity testing requirements to allow greater flexibility

A timeline was established for the recent amendments and is included below:



Avogadro has extensive experience in developing, amending and reviewing SPCC Plans. If think your SPCC Plans needs revisions or require consultation to assure compliance with the changes to 40 CFR 112, please contact Bill Barnes, PE, at 610-559-8776 X206. Bill is registered in seven states and has over 15 years experience addressing SPCC requirements in many states along with EPA and USCG regions.

Monitoring Summer Air Quality

Author: Heidi Fleming

The weather this summer has been exceptionally hot and humid, with temperatures reaching record highs in many cities in the recent July heat wave. In addition to health and environmental problems stemming solely from the higher temperatures, the hot weather can also affect the quality of the air.

Air Quality Index

The Air Quality Index (AQI) is one way to find out the quality of the air where you live. The AQI is calculated by USEPA for the five criteria air pollutants regulated by the Clean Air Act (CAA): ground-level ozone, particulate matter, carbon monoxide, sulfur dioxide, and nitrogen oxides. Each of these pollutants has a national ambient air quality standard (NAAQS) established by USEPA. The AQI designates different levels of air quality on a 0-500 scale (see table below). This data is calculated from more than 4,000 monitoring sites around the country. In the summer months, ground level ozone becomes an even greater threat to human health. When the AQI reaches an unhealthy level, an Ozone Action Day may be declared, where people are encouraged to take precautions and to reduce vehicle use and other ozone causing activities.

Air Quality Index (AQI) Categories*

Levels of Health Concern	Numerical Value	Meaning
Good	0-50	Air quality is considered satisfactory, and air pollution poses little or no risk.
Moderate	51-100	Air quality is acceptable; however, for some pollutants there may be a moderate health concern for a very small number of people. For example, people who are unusually sensitive to ozone may experience respiratory symptoms.
Unhealthy for Sensitive Groups	101-150	Although general public is not likely to be affected at this AQI range, people with lung disease, older adults and children are at a greater risk from exposure to ozone, whereas persons with heart and lung disease, older adults and children are at greater risk from the presence of particles in the air.
Unhealthy	151-200	Everyone may begin to experience some adverse health effects, and members of the sensitive groups may experience more serious effects.
Very Unhealthy	201-300	This would trigger a health alert signifying that everyone may experience more serious health effects.
Hazardous	301-500	This would trigger a health warning of emergency conditions. The entire population is more likely to be affected.

Looking at Ozone

Ozone (O₃) is found both at ground level and in the upper regions of the atmosphere. Ozone in the atmosphere helps to form a protective layer which blocks the sun's harmful rays, however ground level ozone is a main component of smog and can cause a plethora of health and environmental problems. Ground-level ozone is formed when NO_x, VOCs, CO and methane react in the sunlight. Emissions from motor vehicle exhaust, industrial facilities and utilities, and gasoline vapors all contribute to ozone production. Ozone levels are higher in the summer due to the hot and sunny weather.

The health effects of ozone include difficulty breathing and shortness of breath, coughing and sore throat, inflammation and damage to lungs, more susceptibility to respiratory infection, and aggravating lung diseases such as asthma, emphysema and bronchitis. Ground-level ozone also damages vegetation and ecosystems, as it can interfere with plants ability to produce and store food, which leads to reduced growth and greater susceptibility to diseases, pollutants, etc.

Changing Regulations

On January 6, 2010, EPA proposed to revise the NAAQS for ground-level ozone. USEPA is proposing to lower the 8-hour primary ozone standard to within the range of 0.060-0.070ppm down from the 0.075ppm standard set in 2008. USEPA also looks to set a distinct secondary standard within the range of 7-15 ppm-hours (as of now the primary and secondary are the same). The primary standard is set in order to protect public health, while the secondary standard is designed to protect sensitive ecosystems and vegetation during the summer months when ozone concentrations are highest. USEPA plans on issuing the final standard in August 2010.

For more information or to find out the air quality in your area, you can go to the USEPA affiliated website, AIRNow (www.airnow.gov), or to your state agency website, such as NJDEP (www.njairnow.net), or PADEP (www.dep.state.pa.us/dep/deputate/airwaste/aq/aqm/aqi.htm).

*This table is taken from the AIRNow website (www.airnow.gov)

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IMPORTANT DATES

July 1: Schedule CGA/RATA for CEMS

July 1: EPA Form R Report (and NJ RPPR) due

July 1: Annual Air Emission Statements due in IN

July 30: EEMPR for 2nd Quarter due

July 30: Semi-Annual Title V Compliance Certification due in NJ, VA, CT

Aug 1: Semi-Annual Title V Compliance Certification due in DE

Sept 1: Title V Emission Fees due in PA

Consulting Division Career Advancements

Author: Bill Barnes



Hannah Azzalina: CIHM Certificate

We are pleased to inform that Hannah Azzalina has completed studies and examination requirements towards a Certificate in Industrial Hygiene Management via a distance learning opportunity with Columbia Southern University. Hannah elected to pursue this continuing education opportunity to strengthen her qualifications to deliver industrial hygiene solutions supporting Debbie Kravatz. The 10 week course include review of Industrial Hygiene principles, toxicology/exposure review, occupational health standards, airborne hazards, sampling techniques for airborne contaminants, indoor air quality, control of airborne hazards, occupational skin disorders, occupational noise exposure, ionizing radiation effects, ergonomics, temperature effects, and selection/use of personal protective equipment. Please share in congratulating her on a job well done and her contributions supporting our increased capabilities in delivering industrial hygiene services.



Heidi Fleming: Promotion to Project Manager

Heidi Fleming has been promoted to Project Manager at Avogadro Environmental effective April 1, 2010. Over the course of the past year she has been working diligently at demonstrating competencies against the Consulting Division Project Manager job responsibilities since returning from maternity leave. In March, she completed four years of service with the company. She currently serves as client and project manager for several important Consulting division clients such as MARS Chocolate with sites in both PA and NJ as well as Cleveland Steel Container Corporation in Quakertown, PA. Please join us in congratulating her in achieving this milestone and her continued success in client management and motherhood.