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May 13, 2013

U.S. Environmental Protection Agency
EPA West (Air Docket)
Mailcode: 6102T
1200 Pennsylvania Ave, NW
Washington, DC 20460

Attn: Docket ID No. EPA-HQ-OAR-2012-0322

The Coalition for Responsible Waste Incineration (CRWI) appreciates the opportunity to submit comments on *State Implementation Plans: Response to Petition for Rulemaking; Findings of Substantial Inadequacy; and SIP Calls to Amend Provisions Applying to Excess Emissions During Periods of Startup, Shutdown, and Malfunction; Proposed Rule*. 78 Fed. Reg. 12,460 (February 22, 2013). CRWI is a trade association comprised of 23 members.

CRWI requests that the Agency withdraw the proposed rule. If the Agency does not agree with this request, we have suggestions on the following three issues that we believe would make the program workable.

1. The definition of malfunction in this proposed rule is internally inconsistent and not consistent with the definition in the general provisions, making the Agency's proposed language arbitrary and capricious.

2. The proposed affirmative defense language is internally inconsistent and is potentially misleading, making the Agency's proposed language arbitrary and capricious.

3. EPA should allow for flexibility during shutdowns and startups following a malfunction.

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Specific comments on each of the issues listed above are attached. Thank you for the opportunity to comment on this proposed rule. If you have any questions, please contact me at (703-431-7343 or mel@crwi.org).

Sincerely yours,

Melvin E. Keener, Ph.D.
Executive Director

cc: CRWI members
P. Long, EPA

General comments

CRWI requests that EPA withdraw the proposed rule. If finalized, we believe that this action would impose a large administrative burden on each of these state's programs and create the need for thousands of permit modifications without a demonstrated need for such an action. We do not believe that EPA has shown that going through this process would result in any significant improvement in air quality. As such, it would require permit writers and permit holders to expend a large amount of resources with minimal environmental benefit.

Should the Agency not agree to this request, the following specific suggestions would help make the program workable.

Specific comments

1. The definition of malfunction in this proposed rule is internally inconsistent and not consistent with the definition in the general provisions, making the Agency's proposed language arbitrary and capricious.

   At 78 Fed. Reg. 12,463, EPA defines malfunction in the following way: "The term *malfunction* means a sudden and unavoidable breakdown of process or control equipment." At 78 Fed. Reg. 12,479, EPA gives a slightly different definition of malfunction as a part of the suggested affirmative defense language. Here EPA defines a malfunction as "a sudden, infrequent, and unavoidable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner…"

   In 40 CFR 63.2, EPA defines malfunctions as follows.

   > *Malfunction* means any sudden, infrequent, and not reasonably preventable failure of air pollution control and monitoring equipment, process equipment, or a process to operate in a normal or usual manner which causes, or has the potential to cause, the emission limitations in an applicable standard to be exceeded. Failures that are caused in part by poor maintenance or careless operation are not malfunctions.

   EPA appears to have three different definitions of malfunctions. Using the definition from the General Provisions as a base, the definition at 12,463 leaves out the term "infrequent," and replaces the phrase "not reasonably preventable" with the word "unavoidable." The definition in the suggested affirmative defense language is closer to the definition in the General Provisions but still replaces the phrase "not reasonably preventable" with the word "unavoidable." Replacing "not reasonably preventable" with "unavoidable" makes the bar for the use of an affirmative defense impossible to reach because reasonableness is removed from the evaluation. Almost any event can be "avoided" by taking extreme and unreasonable action. For example, a facility can eliminate <u>all</u> malfunctions by ceasing to operate. This drastic

approach, however, is unreasonable and certainly not the intended outcome of MACT regulation. No one, we hope, would argue that facilities should take unreasonable steps to eliminate malfunctions.

All equipment ultimately will fail. For example, if a car battery weakens over time ahead of its expected life and then fails without notice, a reasonable person would consider that a malfunction even knowing that a battery will ultimately fail. There are steps a prudent person would take to prevent catastrophic failure (e.g., investigating sluggishness at starting, especially in cold weather) but it is not unknown for a battery to fail suddenly and without warning, with no advance warning, even when very new. Thus it can never be totally preventable, even if you replaced it with a new battery every month (which is not reasonable). Another example might be rotating equipment that gives an indication of vibration. If left undisturbed, it may or may not become a problem. Certain adjustments can often be made to improve the situation to normal levels of vibration. Those adjustments can also lead to failure, but there is no way to know the outcome in advance. Based on the knowledge of the individual piece of equipment, a company may choose to act or not. That does not mean negligence necessarily existed if it failed before expected or even if there was some related information that could have indicated possible failure.

The question is not whether all equipment will fail because it will. The question is whether it will fail during operation, and what can be done about that. A good predictive and preventative maintenance program is designed to use the best knowledge available to detect or predict future failures in a reasonable manner in order to prevent otherwise unanticipated and undesired failures. Sometimes run-to-failure is the best approach, because there is no way to prevent a failure, and the outcome is not serious (e.g., a light bulb – unless in a critical application). In other cases, like bearings, vibration analysis can be used to monitor equipment degradation over time so that replacement can be conducted at a reasonable time before catastrophic failure occurs. At times there is no reliable way to predict a certain failure mode and a "sudden and unanticipated" (and undesirable) failure of a component will occur. This will happen regardless of how well a predictive and preventative maintenance program is being implemented (e.g., o-ring failures in the Space Shuttle program). No program can be 100% accurate at achieving this goal. That means that many, but not all, unanticipated and sudden failures can be and are prevented – but not all of them. We are not trying to argue that failures are acceptable, but that failures can never be 100% prevented, and a reasonable level of care is to be expected of facilities in executing their preventive maintenance programs.

As written, the proposed definition of malfunction essentially requires the facility to show that no action could have foreseen or prevented the malfunction. This essentially requires the facility to enumerate all possible preventive measures and demonstrate that none of them would be effective. How can that burden be met? It is not possible to know the outcome of a choice that’s not made. In the example of the vibrating rotating equipment given above, how could a facility show that making

an adjustment wouldn't have prevented the malfunction, if they chose not to make one? If they did make an adjustment, and a malfunction occurred soon after, how could they show that no adjustment or a different adjustment would not have prevented the malfunction? The burden to demonstrate the outcomes from a myriad of counterfactual alternate realities is impossible to meet.

The correct way to show reasonableness is to identify the steps that were taken in the attempts to minimize malfunctions. The facility should be required to show that it had trained personnel, written operating and maintenance procedures, and that it followed those procedures. The facility's actions should be judged against a standard of care and competence based on normal procedures for that industry sector. If the facility is doing the right things, then they have shown they are actively working to minimize malfunctions.

Our point with these examples is that it is impossible to completely avoid malfunctions. A facility can minimize them but they cannot be entirely avoided. Using the term "unavoidable" without including "reasonably" creates a bar that cannot be reached.

CRWI believes that it is inappropriate to have different definitions of malfunction and requests that the Agency revise the language to reflect the General Provisions definition of a malfunction which has been in force for many years.

2. The proposed affirmative defense language is internally inconsistent and is potentially misleading, making the Agency's proposed language arbitrary and capricious.

   CRWI suggests the following modifications to the affirmative defense language to make it more usable, logical, and consistent with its purpose. CRWI understands that most of the provisions EPA has proposed for the affirmative defense comes from earlier guidance memos. While these provisions were in guidance, the Agency did not need to be careful of the wording since they were only guidance and did not have the weight of regulation. However, if the Agency wants to codify this guidance into regulatory language, several changes are needed.

   a. The language in the provision is contradictory. In paragraph (a), the phrase "preponderance of evidence" is used while later in that paragraph (iii), the language refers to "any activity." This same trend occurs in paragraphs (5) – "All possible," (6) "All," and (8) "At all times." These phrases are inconsistent with the burden of proof the Agency is requiring since the term "preponderance" does not mean all of the time. CRWI suggests that the phrase "preponderance of evidence" is adequate and the references to "all" and "any" in the later paragraphs should be modified.

   b. To many engineers and some regulators, the term "root cause analysis" implies a specific formal process. For many malfunctions, the cause is immediately

obvious and a formal process for determining the cause is not needed. When a malfunction occurs, the expectation is that the facility will correct the problem as quickly as possible and return to their operating window. A formal root cause analysis is typically limited to very significant events or repeat events. For example, if a thermocouple fails, the most likely cause is a bad thermocouple. The first response is to simply replace the thermocouple. However, if the replacement thermocouple fails within a short period of time, then something else may be causing that event to occur and a more detailed analysis may be needed. It may take several failures before the real cause is identified. Here a formal root cause analysis may be needed, but it certainly is not needed to replace the first failed thermocouple.

The Agency's proposed language assumes that all malfunctions are equally significant and need an identical degree of investigation. For example, a missing data point due to a malfunction of the data acquisition system is not as significant as a power failure or a catastrophic event such as fire or explosion. CRWI believes that a formal root cause analysis should only be used when other reasonable methods fail to show what caused the malfunction or when the serious nature of an event might make such an analysis necessary. Moreover, other tools may be more appropriate (e.g., failure mode and effect, fault tree, etc.) or more powerful tools may be introduced in the future. The facility is the only one that can and should decide what tool to use to determine the cause of the malfunction.

Part of this problem may be in communications. To some companies and potentially to some regulators, the term "root cause analysis" implies a specific formal process. There are several techniques that may be called "root cause analysis," depending on the author and industry. If EPA intends for the facility to investigate and fix the source of the malfunction so that it is less likely to recur, CRWI supports that concept but suggests that the Agency use an alternative term that does not carry a specific meaning. However, if the Agency envisions a formal process for determining the root cause for every malfunction, no matter how simple, CRWI believes this is unnecessary and would result in excess efforts with no environmental gains.

c. As facilities and EPA move toward electronic recordkeeping, it does not make sense to require keeping a "properly signed, contemporaneous operating logs" as a requirement for an affirmative defense. There are a number of electronic methods for maintaining records currently available (and more will likely be available in the future). As such, we suggest modifying this provision.

d. The proposed language requires a facility to eliminate the causes of malfunctions. This is an impossible task and is inconsistent with the concept of what constitutes a malfunction (which is an event that is either unavoidable or not reasonably preventable). A facility cannot eliminate the causes for certain malfunctions (e.g., lightning strikes) and if it could, the event would not be a

malfunction. We suggest changing the language to require facilities to find ways to mitigate future occurrences.

e. In two recently promulgated rules, EPA removed the requirement to use off-shift and overtime labor from the requirements for an affirmative defense. The first example is in the major source boiler MACT rule where the Agency states:

> We have also re-evaluated the language concerning the use of off-shift and overtime labor to the extent practicable and believe that the language is not necessary. Thus, we have deleted that phrase from section 63.7501(a)(2).

(78 Fed. Reg. at 7,147, January 31, 2013). The second example is in the CISWI final rule where the Agency states:

> The EPA no longer believes the language concerning the use of off-shift and overtime labor is necessary because the regulation requires that to establish the affirmative defense the owner must prove by a preponderance of the evidence that repairs were made as expeditiously as possible when a violation occurs. Although we believe that use of off-shift or overtime labor could be cited as evidence that the owner or operator expedited repairs, we do not believe this level of detail is necessary in the regulatory text.

(78 Fed. Reg. at 9,120, February 7, 2013). CRWI suggests that the same logic the Agency used in these two recently promulgated rules applies to this language and suggests that the requirement to use off-shift and overtime labor be dropped.

Based on the discussions above, CRWI suggests that EPA consider making the following modifications to the proposed regulatory language in § 63.456 (78 Fed. Reg. at 12,479) to address the concerns mentioned above and to make an affirmative defense a more useful tool (using ~~strikeout~~ to show text deleted and <u>underline</u> to show text added).

> § 63.456 Affirmative defense for violation of emission standards during malfunction.
>
> In response to an action to enforce the standards set forth in §§ 63.443(c) and (d), 63.444(b) and (c), 63.445(b) and (c), 63.446(c), (d), and (e), 63.447(b) or § 63.450(d), the owner or operator may assert an affirmative defense to a claim for civil penalties for violations of such standards that are caused by malfunction, as defined at 40 CFR 63.2. Appropriate penalties may be assessed, however, if the owner or operator fails to meet the burden of proving all of the requirements in the affirmative defense. The affirmative defense shall not be available for claims for injunctive relief.
> (a) To establish the affirmative defense in any action to enforce such a standard, the owner or operator must timely meet the reporting requirements in paragraph (b) of this section, and must prove by a preponderance of evidence that:

(1) The violation:
(i) Was caused by a sudden, infrequent, and ~~unavoidable~~ not reasonably preventable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner; and
(ii) Could not have been reasonably prevented through careful planning, proper design, or better operation and maintenance practices; and
(iii) Did not stem from ~~any~~ an activity or event that could have been reasonably foreseen and avoided, or planned for; and
(iv) Was not part of a recurring pattern indicative of inadequate design, operation, or maintenance; and
(2) Repairs were made as expeditiously as possible when a violation occurred~~. Off-shift and overtime labor were used, to the extent practicable to make these repairs~~; and
(3) The frequency, amount and duration of the violation (including any bypass) were minimized to the maximum extent practicable; and
(4) If the violation resulted from a bypass of control equipment or a process, then the bypass was unavoidable to prevent loss of life, personal injury, or severe property damage; and
(5) ~~All possible~~ Reasonable steps were taken to minimize the impact of the violation on ambient air quality, the environment, and human health; and
(6) ~~All e~~Emissions monitoring and control systems were kept in operation if at all possible, consistent with safety and good air pollution control practices; and
(7) All of the actions in response to the violation were documented ~~by properly signed, contemporaneous operating logs~~; and
(8) ~~At all times, t~~The affected source was operated in a manner consistent with good practices for minimizing emissions; and
(9) A written ~~root cause analysis~~ report has been prepared, the purpose of which is to determine~~, correct,~~ and ~~eliminate~~ mitigate the primary causes of the malfunction and the violation resulting from the malfunction event at issue. Facility personnel will determine the appropriate type of analysis required (may include but not limited to root cause analysis, failure mode and effect, fault tree, etc.) to identify the cause of the malfunction. The ~~analysis~~ report shall also specify, using best monitoring methods and engineering judgment, the amount of any emissions that were the result of the malfunction.
(b) *Report.* The owner or operator seeking to assert an affirmative defense shall submit a written report to the Administrator with all necessary supporting documentation, [showing] that it has met the requirements set forth in paragraph (a) of this section. This affirmative defense report shall be included in the first periodic compliance [report], deviation report, or excess emission report otherwise required after the initial occurrence of the violation of the relevant standard (which may be the end of any applicable averaging period). If such compliance [report], deviation report, or excess emission report is due less than 45 days after the initial knowledge of the occurrence of the violation, the affirmative defense report may be included in the second compliance [report], deviation report, or excess emission report due after the initial occurrence of the violation of the relevant standard.

3. EPA should allow for flexibility during shutdowns and startups following a malfunction.

   At Fed. Reg. 12,480, the Agency discusses the idea of a shutdown as a result of a malfunction stating that:

   > It is foreseeable that a shutdown necessitated by a malfunction could be considered part of the malfunction event with the appropriate demonstration of the need to shut down differently than during a routine shutdown, during which a source should be expected to comply with applicable emission limitations. It is possible, however, that a routine shutdown may be achievable following a malfunction event, and a source should be expected to strive for this result.
   >
   > As a general matter, the EPA does not anticipate that there would be startups that would follow a malfunction that should be considered part of the malfunction event, but in this action the EPA is requesting that commenters address this issue if there could be circumstances that would justify such treatment.

   CRWI agrees that it may be necessary to shut down a unit as a result of a malfunction. In some cases, the malfunctioning equipment is integrated into the functioning of the unit in a manner that requires the entire unit to be shut down prior to repairing the malfunction. This type of a shutdown may be much different than are planned shutdowns. In other cases, shutdowns that are a result of a malfunction can be orderly. However, if the malfunction creates an emergency situation where the safety of personnel is threatened or significant property damage is imminent, those shutdowns will be much different than is a planned shutdown. We can also see other circumstances where the malfunctioning equipment can be easily isolated and repaired without shutting down the entire unit. Our point is that the method in which a malfunction is handled will depend upon the individual unit and the malfunction. One size does not fit all. The Agency needs to allow as much flexibility as possible so that facilities can develop and implement their site-specific startup, shutdown, and malfunction plan.

   In addition, the Agency asked about going from a malfunction to startup. Most would classify a power outage as a malfunction. When you lose power, facility boilers will shut down. When power comes back on, the operators will immediately restart the boilers because without the steam the entire production processes can shut down. This is one example of potentially going from a malfunction to a startup as quickly as possible.

   We believe that there are simply too many different possibilities for responding to malfunctions for the Agency to develop a restrictive set of instructions. We suggest that whatever is finalized allow for a facility decide the best method of recovering from a malfunction. In some cases, that may require a complete shutdown, followed by a cold start. In other cases it may involve a warm idle (shutdown), followed by a

startup. In others, the facility may need to go directly from a power failure to startup as soon as possible. We believe that the facilities and not the permitting authorities are best equipped to decide how to respond to malfunctions and suggest that the instructions to the permitting authorities allow that flexibility.