Broome County Environmental Management Council
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July 2, 2010

Attn: Mr. John Barnes, P.E.
New York State Department of Environmental Conservation
Division of Air Resources
625 Broadway, 2nd Floor
Albany, New York 12233-3251

Email : 247owb@gw.dec.state.ny.us

RE: Comments on the Proposed 6 NYCRR Part 247, Outdoor Wood Boilers

Dear Mr. Barnes:

The Broome County Environmental Management Council (BCEMC), a citizen advisory group to County government on environmental matters, thanks you for this opportunity to comment on the proposed 6NYCRR Part 247 regulations for Outdoor Wood Boilers (OWB).

The BCEMC offers the following information for perspective and points for your consideration as you prepare a final draft of the OWB regulation. This information is organized under three general categories: General Comments and Considerations, Comments on the Content of the Proposed Regulation, and lastly, Recommendations.

I. General Comments and Considerations

The proposed regulation's establishment of much stricter Particulate Matter (PM) emission rates for the OWB is to be applauded. Looking forward, it should be reasonable to expect that the technology will improve to the point where OWB technology matches the current EPA standard for indoor wood stoves. However, the heating output ratings for the OWB, 250,000 BTU/hr being the norm, is suggestive of either poor overall system efficiency for the OWB installation or of poor insulating performance of the structures being heated by these devices. Typical heat output ratings for gas or oil-fueled furnaces for homes are typically much less than 100,000 BTU/hr.

However, the BCEMC believes that some reasonable emissions standard for ALL wood burning devices is sorely needed, as can be seen during the winter months in many rural and suburban neighborhoods. In the spirit of fairness, the OWB should not be picked on exclusively as emissions standards should be evaluated and improved for all forms of wood-fueled heating appliances, thereby providing more adequate protection of human health.

The January 26, 2007 "Dispersion Modeling Assessment of Impacts of Outdoor Wood Boiler Emissions in Support of NESCAUM's Model Rule", prepared by the Division of Air Resources, NYSDEC, assessed the PM concentrations in the vicinity of current technology OWBs. Unfortunately, this study did not consider local terrain effects, vegetation effects such as nearby woods, highly stable

meteorological conditions, or the effects of multiple OWB *and* other wood burning sites within a confined topographical setting. These factors will result in PM concentrations even less favorable than those found in the Assessment study. Further, if the statewide background level of PM is already 15 micrograms per cubic meter as stated in DEC's Assessment report then it may be reasonable to expect violations of current EPA PM standards, not to mention proposed EPA standards.

II. Comments on the Content of the Proposed Part 247 OWB Regulation

With the above introduction in mind, the BCEMC provides comments for specific provisions within the draft rule, as provided below:

Section 247.2 Definitions

- Part (b)(2). "Clean wood' definition should also state that only seasoned, dry *hardwood* is considered "clean" wood.
- An explanation for "six minute mean" as references in Section 247.3 (d) should be included in the definitions.
- Part (b)(10). The definition of a "new outdoor wood boiler" should be appended to state the emission limits required of the new OWB, citing both the residential and commercial emission limits. This would make it clear that new OWBs are a cleaner technology product, and not solely defined by operational date.

Section 247.3 Prohibitions

- Part (c) Condition 3 Rewrite to prohibit a visible plume migrating from an OWB onto *or across nearby* properties, rather than "migrating from an OWB and contacting a building on an adjacent property". Perhaps a definition for "adjacent" is in order as plumes could impact not only contiguous properties, but also non-contiguous properties "nearby" an OWB.

  Even invisible smoke fumes that provide noticeable odor reflect concentrations well in excess of the EPA PM standard. In July 2002, for example, wild fires in the boreal forest of northern Quebec along with southerly wind patterns caused PM concentrations as far south as Philadelphia to be an order of magnitude higher than the EPA 24-hr. standard for PM concentrations. These conditions did not create a situation where opacity standards were violated, and these concentrations are rarely detectable by smell.

- Part (d). Opacity standards do not correlate well with concentration levels some distance from the plume. Also, the opacity test is useless for the nighttime when wood burning may be more prevalent. Many complaints brought against existing OWBs occur on clear, cold winter nights when temperature inversions result in a highly stable atmosphere, causing poor dispersion and high localized PM concentrations. However, the opacity test may be a good means to detect the use of unseasoned or wet wood during the daytime.

Section 247.4 Approved Fuels

- Part (a)(1). Stipulate seasoned *dry hardwood* here. Unlike hardwoods, softwoods like pine burn hot, fast and emit higher quantities of PM per Btu. Also, many OWB chambers allow for large, four-foot lengths of solid log fuel or log fuel with diameters exceeding one-foot. These are not sensible sizes

to burn if minimal smoldering and smoke production is desired. Reasonable wood fuel length and sizes should be stipulated here. Pellet stoves achieve their high efficiencies in part to the wood fuel's small size that helps maintain more desirable fuel/air ratios supporting cleaner combustion, particularly when the heat load demand cycles off and on considerably.

- Part (a)(5). Clearly state the circumstances under which "approved fuels" includes "other fuels approved by the Department per the certification requirements of Section 247.8". The Regulatory Impact Statement notes under Alternative 4 that the list of approved fuels includes fuels approved by the Department "to account for future modification that EPA may take to Test Method 28-OWHH to allow testing of fuels other than clean wood".

Section 247.5 Residential-Size New Outdoor Wood Boilers

- Part (a) Emission limits. Any technology that could yield OWB emissions on the order of those from EPA-certified wood stoves (4.1 to 7.5 grams per hour) should be strongly encouraged by the regulatory process.

- Part (b) Setback. How is the DEC sure that the PM concentrations based on emission rates will not exceed health standards more than 100 feet away under very stable meteorological conditions? With very stable air, PM concentrations may reach their maximum some distance from the source of the emissions. Studies indicate that under highly stable atmospheric conditions, the EPA PM concentration standards could be violated 1000 feet away from an OWB of today's technology and rated at 250,000 Btu/hr. Based on this analysis, a setback of 250 feet would represent a more protective standard under a wider range of potential atmospheric conditions.

- Part (c) Stack height. A general rule of thumb in the Air Pollution Control Industry is that a chimney should be two and a half times taller than the closest building, and five times away from the building as the building is tall. This ensures that the building's disturbance of the airflow will not "capture" and entrain the emissions from the chimney. Observations of wood smoke plumes from homes with indoor wood furnaces and two-foot chimneys illustrate that airflow downwash in the home's vicinity has a major impact on the smoke plume's path and dispersion. Therefore, the BCEMC recommends that the stack height regulation be increased to a minimum of 10 feet above the height of the peak of the tallest building within the regulation setback distance from the OWB.

Section 247.6 Commercial-Size New Outdoor Wood Boilers

- Part (c) Setback. The same comments apply as for **Section 247.5 Residential-Size New Outdoor Wood Boilers** Part (b) Setback.

  The setbacks with respect to PM emission rates for residential and commercial devices are interesting. If a residential device is permitted to emit up to 18 grams/hr and a commercial OWB is permitted to emit roughly 10% more (up to 20 grams/hr), why do only commercial devices, but not residential devices, have a setback standard for schools? Do not limit the 1000 foot setback to just schools but include institutions and indoor/outdoor public gathering spaces.

  Further, one might expect the setback of the commercial OWB to be only 10% more than the residential OWB. If a 1000 foot setback from schools is required for a commercial OWB for quantifiable health concerns, then it should be required that a residential OWB have much more than a 100 foot setback. After all, children play in yards at home much more frequently than they do at

school. Furthermore, residences may be homes to the elderly or to persons with respiratory diseases, and these citizens deserve similar protection of their air quality.

- Part (d) Stack height. The same comments apply here as for **Section 247.5 Residential-Size New Outdoor Wood Boilers.** Part (c) Stack height.

Section 247.8 Certification of New Outdoor Wood Boilers

- Part (d)(4) Certificate of Compliance. "Upon written notice of the certificate holder, a certificate may be withdrawn by the Department if it is determined that the application contained false or inaccurate information, or for other good causes". What "other good causes" will warrant withdrawal of a certificate?

- Part (e) Test Method. "Alternative methods may be used upon written approval from the Department." Stipulate here that the test method must be *equivalent* to the EPA Test Method 28-OWHH.

Section 247.9 Notice to Buyers

- Part (b)(1)(i)(vi) 'Completed Notice'. The BCEMC encourages that the Department require a site plan diagram or sketch plan be added with the condition to include the distance from the new OWB to the nearest property boundary line in the Completed Notice.

Section 247.10 Requirements for Existing Outdoor Wood Boilers

- In general, there should be an immediate ban of any further sales or installations of OWBs that do not meet the standards proposed in the draft regulation for future OWBs.

- Part (a). The same comment apply here as for **Section 247.5 Residential-Size New Outdoor Wood Boilers.** Part (c) Stack height.

- Part (b) Phase out of existing OWBs. More concrete regulation is needed for addressing those existing installations where OWB operational practice, vicinity to other residences, or local building and topographical scenarios create unhealthy conditions for neighboring residences. Something must be done for citizens who have lived for years next door to (and sometimes only 50 feet away from) unsatisfactory OWB operations. Waiting until 2015 to phase-out and cease operation of existing OWBs is not acceptable. Neither is waiting until 2020 since consumers can still purchase older units and commence operation until April 14, 2011. This creates a nine-year loophole for an operator to become compliant.

- Part (c) Summertime OWB Operations. These requirements are completely inconsistent with the regulations for new certified OWBs considering that the existing OWB emissions are an order of magnitude greater. Further, this requirement only pertains to summer use of existing OWB devices. There is no summertime limitation for new OWB devices. This means that new OWB devices will allow for greater exposure to PM by neighboring people who have windows open, have clothes drying outdoors, or are participating in any activities on their own property. Even so, there must be wintertime regulations for the use of existing OWB devices.

If a new commercial OWB, emitting up to 20 grams/hr must be 1000 feet from a school and 300 feet from a residential property line, then certainly an existing OWB, emitting 70 to 160 grams/hr must have a much greater setback requirement. It is doubtful that a 500 foot setback for existing OWB devices would be adequate under all topographical and meteorological conditions. At a minimum, the summertime use of an existing OWB should require a minimum setback of 1000 feet from adjacent property lines in all situations. Incidentally, during the summertime, it is likely that children will spend the majority of their time outdoors in their own yards, or in the yards of their friends, and not on the grounds of their local school.

III. Recommendations for the Part 247 OWB Regulation

In an effort to summarize the remarks provided above, the BCEMC offers the following recommendations for enhancing the protective aspects of the proposed OWB regulations:

1. With or without the adoption of the Part 247 regulations, the sale and installation of all current-technology OWB products should be banned.

2. Consideration of cumulative impacts due to multiple wood-burning devices within a neighborhood, the effects of local topography and of highly stable atmospheric conditions should provide benchmarks for stack height and setback regulations. An adequate setback regulation will provide significant benefit in that it will help minimize cumulative, adverse air quality impacts.

3. Setbacks should be limited to no less than 250 feet for new-technology residential OWB products and 300 feet for new-technology commercial OWB products. Setback restrictions apply to both residential and commercial OWB for schools, institutions and indoor/outdoor public gathering spaces.

4. Stack height should be limited to 10 feet above the highest point on the tallest building within the setback distance applicable to the OWB device.

5. There should be no summertime usage permitted for any technology OWB product within 1000 feet of any academic, medical, residential or recreational property boundary not serviced by the OWB.

6. All existing technology OWB devices should be required to meet the above recommended stack height regulation within 6-months of the adoption of Part 247 regulations.

7. Provide in the listing of Approved Fuels the maximum permissible (preferably dry) seasoned clean wood size.

8. A long range plan to require rigid emissions standards (that meets or exceeds the current EPA standard for indoor woodstoves) for all wood-burning devices should be developed. This long range plan will support sustainable use of wood-based energy reserves and promote a more healthy air quality standard for New York.

9. Based on comments made during a recent public hearing on the proposed regulation, the DEC may wish to consider a hardship and/or uniqueness clause to address situations where, for example extending the stack height of an OWB to be higher than a silo, may be unreasonable. It may also be reasonable to effectively grandfather the use of a current technology OWB for agricultural or

hardship cases if existing setback exceeds 1000 feet from any academic, medical, residential or recreational property boundary.

Finally, the BCEMC recommends that a tax incentive or other financial mechanism be considered to assist those citizens who have purchased existing-technology OWB devices in good faith. There should be some form of statewide assistance to help support this environmentally responsible, but costly, product replacement mandate.

The BCEMC looks forward to your actions in this regard and thanks you for your ongoing efforts to protect air quality and human health in New York. We welcome the opportunity to discuss these issues with you.

Yours sincerely,

André G. LaClair
(electronically signed)

André G. LaClair
Acting Chairman, BCEMC

AGL & SM

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