**Grain Loading/Opacity Background Document**

**Grain Loading**

The Department is proposing to change the grain loading limits in OAR 340-226-0210 and 340-228-0210 from 0.2 and 0.1 to 0.20 and 0.10 grains/dscf, respectively. These changes are being made for the following reasons:

* Based on 06/06/90 EPA guidance the Department is concerned that these standards should have been enforced as if the zeros were there all along. The EPA guidance is titled “Performance Test Calculation” and is from OAQPS and the Stationary Source Compliance Division to New Source Performance Standards/National Emission Standards for Hazardous Pollutants Compliance Contacts. It addresses calculating and reporting emission rates and concentrations when determining compliance with the new source performance standards (NSPS) and national emission standards for hazardous pollutants (NESHAP), but makes reference to SIP standards, as well. The guidance states:

“Consider all emission standards to have at least two SF’s, but no more than three SF's…. **Because the emission standards were not written with consideration to the rules of SF's, especially with the use of zeros, all existing emission standards are considered to have at least two SF's, but no more than three SF's, under this guideline.** Thus….Case 4: 0.1 g/kg (Subpart BB) is considered to be 0.10 (two SF's).”

This change will also provide clarification for compliance. The Department does not plan to review past source test data to determine if sources were out of compliance with the grain loading standards according to EPA’s interpretation of significant figures.

* EPA’s adoption of a new PM2.5 24-hour NAAQS has resulted in 2 nonattainment areas, with a third meeting the definition but not legally designated as such. Even though the majority of emissions in some nonattainment areas may be due to woodstoves, point sources also contribute to the problem. If sources that have emissions greater than 0.2 or 0.1 are required to meet 0.20 and 0.10 grain/dscf, their impacts on PM2.5 air sheds will be reduced by as much as 25% to 50% as a result of this rule change. This proposed rule change will reduce emissions in all areas and will help prevent future problems, especially in light of EPA’s plan to reduce the PM2.5 NAAQS even further.
* Some of the affected sources will probably have to reduce emissions anyway due to future regulations, such as the Boiler and Industrial furnace MACT.
* Having two standards for existing and new sources creates an unequal playing field for industry; especially since new sources can be as much as 40 years old.
* Many of the sources have conducted tests that demonstrate compliance with the lower limits.  In fact, many sources that have a limit of 0.2 gr/dscf can easily meet 0.10 gr/dscf. Reducing the limits would just mean more careful operations in many cases, not necessarily additional controls.
* Phased compliance will give sources that cannot meet the new standards time to comply.

**Opacity**

The 40% opacity limit for existing (installed or modified before 1970) wood-fired boilers is obsolete considering the increase in populations and current ambient air quality standards. DEQ is proposing to eliminate the 40% standard and make the 20% standard applicable state wide. Sources will be allowed to exceed 40% for one 6-minute period in an hour for maintenance.

Statutory authority: ORS 468.020 and 468A.025 (omit if format different from SPITT)

* Some of the affected sources will probably have to reduce emissions anyway due to future regulations, such as the Boiler and Industrial furnace MACT.
* Having two standards creates an unequal playing field for industry; especially since new sources can be as much as 40 years old.
* More and more areas of the state are special control areas due to population increases.
* EPA’s adoption of a new PM2.5 24-hour NAAQS has resulted in 2 nonattainment areas, with a third meeting the definition but not legally designated as such. This proposed rule change will reduce opacity in all areas and will help prevent future problems, especially in light of EPA’s plan to reduce the PM2.5 NAAQS even further. Opacity is generally caused by small particles, so reducing the opacity standard will result in some reductions in fine PM.
* Phased compliance will give sources that cannot meet the new standards time to comply.

The basis of the current opacity standard in Division 208 (e.g., 3 minute aggregate in any 60 minute period) is difficult to administer and no longer appropriate since DEQ and source typically rely on EPA Method 9 for measuring compliance When the standards were first established, compliance was determined periodically by DEQ inspectors that were certified using Oregon’s certification procedures. Many sources now monitor compliance using continuous opacity monitoring systems (COMS) with data acquisition systems that reduce the data to 6-minute averages. Sources also do their own manual observations with certified readers in accordance with EPA Method 9. This method uses 24 consecutive readings in the plume evaluation certification procedures.

* An opacity standard based on a 6-minute average is no more or less stringent than a standard based on an aggregate of 3 minutes in any hour. Theoretically, either basis could be more stringent than the other, but practically, sources do not typically have intermittent puffs of smoke. If there is an upset that lasts longer than 3 minutes, it usually lasts longer than 6 minutes, as well.
* Other reasons for changing to a 6 minute average include:
	+ A reference compliance method has not been developed for the 3 minute standard.
	+ EPA method 9 results are reported as 6-minute averages.
	+ The 3-minute standard adds more cost to data acquisition systems for continuous opacity monitoring systems. Many of the COMS are designed for 6-minute averages, so they have to be modified to record and report data for the 3-minute standard.
	+ Compliance with a 6 minute average can be determined with 24 readings (6-minute observation period); whereas, compliance with the 3-minute standard may require as many as 240 readings (60 minute observation period). In addition, it is the Department’s policy that the inspector observes the source for at least 6 minutes before making a compliance determination.

Changing from a 3-minute to 6-minute standard should have no effect on the environment. Visual emissions are only an indicator of actual pollutant emissions because for most sources, there is no correlation between visual emissions and pollutant emissions.

Provided below is information regarding some of the sources that could be affected by these rule changes:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Source** | **Emissions Unit** | **Limit** | **Control Device Needed?** | **Comment** |
| Swanson Group Roseburg | Wood fired boiler | 20 %0.20  | Yes | cannot meet the proposed boiler MACT CO limit.  |
| Swanson Group Glendale  | Wood fired boiler |  | ESP | cannot meet the proposed boiler MACT CO limit.  |
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| Ochoco Lumber |

 | Hogged fuel boilers #1-6 | 40%/0.2 |  | Backup to boiler #7 |
| Interfor Pacific | Hogged fuel boiler 1&2 | 40%/0.2 |  |  |
| Columbia Forest Products | Hogged fuel boilers 1&2 | 40% |  | Will have to install ESP to comply with MACT |
| Boise Cascade (Pilot Rock) | Hogged fuel boiler #1 | 40%/0.2 |  | Backup to natural gas fired boiler |
| Harney Rock and Paving | Asphalt plant | 20%/0.2 |  |  |
| Rogers Asphalt Paving  | Asphalt plant | 20%/0.2 |  |  |
| Umpqua Lumber  | Wood fired boiler | 20% | Yes | **Currently closed** |
| Weyerhaeuser Warrenton | Wood fired boiler | 0.10 gr/dscf |  | Trouble meeting 0.10, **currently closed** |
| RSG Forest Products  | sawmills with medium efficiency cyclones | 0.2 |  | Okay for opacity, not sure for grain loading |
| Stimson Lumber Clatskanie  | sawmills with medium efficiency cyclones | 0.2 |  | Okay for opacity, not sure for grain loading |
| Tidewater Contractors  | older asphalt plants utilizing wet scrubber controls |  |  | very borderline |
| KF Jacobsen Asphalt | asphalt plant |  |  |  |

The following sources have installed pollution control equipment:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Source** | **Emissions Unit** | **Limit** | **Control Device** | **Reason for Control** |
| Murphy (GP) |  | 0.10 | WESP | compliance order |
| JELD-WEN Klamath Falls  | Boiler G | 0.07 gr/dscf | ESP | in anticipation of the Boiler MACT |
| Stimson Lumber Gaston  | Wood fuel boilers |  | ESP | controlled a recurring opacity problem |
| Roseburg Forest Product facilities Riddle & Coquille |  |  | dry ESPs added after the existing multiclone controls  | in anticipation of the original Boiler MACT |
| Grant Western  | hogged fuel boilers |  | major renovation of multiclones including complete cone replacement  | tired of failing source tests and being issued civil penalties |
| Wallowa Forest Products | hogged fuel boilers |  | major renovation of multiclones including complete cone replacement  | tired of failing source tests and being issued civil penalties |
| Marvin Wood Products  |  | Grain loading? | new blower system to help control additional sawdust created by a new finger joint system | Proactive |
| Murphy Plywood (Lane Co)  | heat cell |  | Dry ESP | emissions greater than the 0.1 gr/dscf; SFO with LRAPA to install dry ESP |
| Boise Elgin | two boilers |  | ESP |  |
| Kinzua Pilot Rock  (now Boise) |  |  | combustion controls |  |
| Boise Island City | sanderdust-fired boilers |  | ESP |  |