


State of Oregon

Department of Environmental Quality

Memorandum

Date: Nov. 16, 2012

To: Environmental Quality Commission

From: Dick Pedersen, Director 

Subject: Agenda item H, Action item, Rule proposal: Klamath Falls PM_{2.5} Attainment Plan
Dec. 6-7, 2012, EQC meeting

Why this is important

This proposed rulemaking adopts an attainment plan that will reduce fine particulate pollution and protect the health of the residents in the Klamath Falls area. The plan and associated rules are designed to bring the area into compliance with National Ambient Air Quality Standards for fine particulate, PM_{2.5}, by the Dec. 2014 federal deadline.

DEQ recommendation and EQC motion

DEQ recommends that the Oregon Environmental Quality Commission adopt the proposed rule amendments as presented in attachment A, approve Klamath Falls PM_{2.5} Attainment Plan and direct DEQ to submit the Klamath Falls PM_{2.5} Attainment Plan to EPA as revisions to Oregon's Clean Air Act State Implementation Plan.

Background and need for rulemaking

History of particulate pollution in Klamath Falls

Klamath Falls has a 25-year history of exceeding and working to meet particulate pollution standards. In 1987, the U. S. Environmental Protection Agency designated Klamath Falls a nonattainment area for coarse particulate, PM₁₀ pollution. DEQ developed a plan in 1991, with revisions in 1995 that included key strategies of a mandatory woodstove curtailment and a large-scale woodstove change-out program. As a result, the area was able to lower PM₁₀ emissions and to meet the standards.

EPA revised the particulate standard in 1997 to include finer, more harmful particulate, PM_{2.5}, and established a daily standard of 65 micrograms per cubic meter. The attainment plan strategies to meet the PM₁₀ standard were so successful that Klamath Falls met the 1997 PM_{2.5} standard. EPA modified the daily PM_{2.5} standard again in 2006, lowering it to 35 µg/m³. Because high winter air pollution levels violated the daily PM_{2.5} standard, EPA redesignated Klamath Falls as a nonattainment area in December 2009. The federal Clean Air Act requires Klamath Falls to reduce its particulate levels to comply with the PM_{2.5} standard by December 2014.

The Klamath Air Quality Advisory Committee

DEQ, in collaboration with Klamath County, convened the Klamath Air Quality Advisory Committee in 2010 to help develop and recommend strategies to bring Klamath Falls into attainment with the standard. The committee met for more than a year to consider data, community values, and pollution reduction strategies with the highest chance of success in meeting the PM_{2.5} standard. The result is a thoroughly evaluated emission reduction recommendations designed to bring the community into compliance by the federal deadline of December 2014. The committee also recommended two secondary contingency measures that would take effect if the 2014 deadline is not met. These recommendations formed the groundwork for the Board of Klamath County Commissioners to include emission reduction measures in ordinances and for DEQ to produce an attainment plan for EPA approval.

State Implementation Plan

The attainment plan, developed by DEQ in accordance with EPA's guidance, is a comprehensive document that identifies the emission sources of PM_{2.5} and estimates the current and future year concentrations based on the emission inventory and measurements. The plan contains emission reduction strategies consisting of local ordinances, DEQ regulations, and non-regulatory elements including incentives and education. If the community fails to reduce particulate emissions by the 2014 deadline, the plan's contingency measures would take effect automatically and are designed to achieve rapid compliance with the PM_{2.5} standard. The contingency measures function as a backstop until such time the plan can be reevaluated and corrected. The proposed attainment plan will help the state and the community control emissions to ensure clean air and protect public health in Klamath Falls.

Effect of rule

The majority of the harmful particulate emissions in Klamath Falls come from residential wood burning emissions. Most of the proposed particulate reductions would come from enhancements to the community's woodstove curtailment program, implemented through local ordinances. Other attainment strategies to reduce pollution from residential wood burning include continuing a program that replaces polluting uncertified woodstoves and a public awareness and education program.

New DEQ rules must require reasonably-available controls to reduce particulate for industrial sources. Specifically, the rules require sources to comply with new opacity and operating plan requirements. The proposed rules would also make it simpler for new or expanded industrial facilities in Klamath Falls by allowing them to offset their

emissions by removing uncertified woodstoves from homes, thereby decreasing wood burning emissions. Historically, industry has only offset emissions by purchasing unused emission credits from other industrial facilities. Those credits are not widely available and that could limit economic growth in the area.

If the attainment plan fails to achieve the federal standard by December 2014, additional regulations in the contingency plan would become effective. The contingency measures would prohibit the use of all uncertified fireplaces inside the Air Quality Zone during the winter wood heating season and would require Title V sources to install continuous emission monitors.

The emission reduction measures in the proposed attainment plan are designed to meet the daily PM_{2.5} standard by lowering daily emissions during the winter heating season to approximately 34 µg/m³. Although the Klamath Air Quality Advisory Committee recommended additional reduction measures to achieve a greater buffer below the standard of 35 µg/m³, DEQ and the Klamath County Commissioners ultimately chose fewer measures with a small margin of compliance to avoid further economic impacts in Klamath Falls during a slow recovery from the economic downturn. Because it achieves the vast majority of emission reductions, the effectiveness of the woodstove curtailment program is critical to successfully meet the PM_{2.5} standard in Klamath Falls.

**Commission
authority**

The commission has authority to take this action under ORS 468.020, 468A.025 and 468A.460.

Key issues

Economic impacts

During plan development and the public comment period, DEQ heard ongoing concerns about how the plan to reduce particulate could further harm an economically struggling region, or hinder recovery. DEQ, the advisory committee and the Klamath Board of County Commissioners were aware of and sensitive to this issue and chose strategies with the lowest fiscal impact on local businesses, the economy and residents.

In addition to minimizing local economic impacts, the proposed plan includes increased flexibility for new or expanded industries by streamlining procedures to use emission offsets from woodstove changeouts. When an area is designated as nonattainment, federal requirements automatically apply for industrial sources. These requirements include requiring the most stringent control equipment for new or expanding sources or reasonable control measures (such as opacity standards, operation and maintenance plans, and fugitive

plans) for existing sources. While DEQ recognizes that these federal restrictions may prevent some industries from expanding or moving to Klamath Falls, they are designed to reduce pollution and ensure the health of all residents. DEQ expects that the attainment plan will achieve timely compliance with the standard, which will enable DEQ to begin the steps needed to lift the more stringent industrial restrictions.

If Klamath Falls meets the standard by 2014, DEQ will develop and submit a maintenance plan to EPA, with a request to re-designate the area to attainment. The maintenance plan can include provisions to ease the restrictions on industrial growth, depending on the implementation success of the existing attainment plan. This will have a positive economic impact on the community. Despite the existing stringent requirements, DEQ is aware of at least two proposals from new businesses planning to locate in the Klamath Falls area.

DEQ also received comments from industrial stakeholders that the industrial contingency strategies, that would apply if the area fails to achieve the standard in December 2014, are overly burdensome. In response, DEQ has proposed to delete the particle emission rate, known as "grain loading," and wood products dryer monitoring requirements for existing facilities since these measures are not critical to achieve further particulate reductions. However, if Klamath Falls does not meet the emission standard by 2014, DEQ has determined that it will be necessary to keep the requirements for opacity monitors to verify compliance with the opacity limit and the industrial contribution to the airshed. The contingency measures would be triggered only if the current plan fails and Klamath Falls does not meet the standard by December 2014. DEQ would re-open the plan and re-evaluate all the strategies discussed during the plan development and possibly include new strategies needed to meet the standard and protect health.

Evaluating compliance with the standard

Community members raised questions related to technical accuracy in determining whether Klamath Falls is above the particulate standard. Comments received stated that the Peterson School monitor should not be used to determine compliance because the location has the poorest air quality, and they argue that the area as a whole is not out of compliance with the standard. This argument is in conflict with EPA requirements mandating that the data to determine compliance must be taken from the highest violating monitor, which is located at the Peterson School. Monitoring studies and EPA regulations confirm that this location is the most appropriate place for a monitor. Over the last 25 years, DEQ has conducted numerous monitoring studies where

particulate samples have been taken throughout the Klamath Falls area. These studies show that particulate levels are consistently high at Peterson School. The Peterson School monitor complies with specific EPA requirements for the location of monitors and how to evaluate the measurements.

A number of comments expressed concerns about effects from a proposed biomass plant on air quality in Klamath Falls. The proposed plant, Klamath Bioenergy, is outside the nonattainment area and it is not addressed in this plan. An additional biomass facility, Klamath Generation, has been proposed for construction inside the nonattainment area, but DEQ has not yet received an application for that facility. DEQ must evaluate Klamath Generation through the permitting process to ensure that it will not have any negative effects on the nonattainment area.

DEQ also received comments that questioned the validity of the PM_{2.5} standard. EPA sets this standard based on the current scientific evidence that indicates that fine particulate matter, when inhaled, is harmful to humans. EPA reviews the standard once every five years as required by law. For areas in violation of the current 35 µg/m³ standard, the federal Clean Air Act requires the development of an attainment plan to reduce emissions and restore healthy air. DEQ expects that the proposed attainment plan will have a positive effect on the health of Klamath Falls residents. There are a number of studies linking PM_{2.5} exposure with respiratory problems and cardiac diseases. U.S. and Canadian studies report statistically significant relationships between an increase in PM_{2.5} and an increase in hospitalizations for all respiratory causes, including chronic obstructive pulmonary disease, pneumonia and asthma. In addition to the greatly expanded body of evidence on hospitalization or emergency department visits for cardiovascular diseases, new epidemiologic studies have also reported associations between more subtle physiological changes in the cardiovascular system and short-term exposures to PM_{2.5} concentrations. In addition to harming public health, these impacts could result in days of missed work that would affect the economy.

Some residents of Klamath Falls expressed concerns about smoke impacts from forest fires and prescribed burns, and questioned why these pollution sources are not targeted as major contributors to particulate levels in the area. Forest fires are capable of emitting so much particulate that the air quality exceeds the standard; however, these events are isolated and infrequent compared to constant wintertime pollution from residential woodstoves. When Klamath Falls exceeds the standard, in nearly all cases this occurs during the

winter months when stagnant air conditions are coupled with increased demand for home heating. During these stagnant air events, any contribution from outside the Klamath Falls basin is unlikely to have significant contribution. Prescribed forest burning is regulated by the Oregon Smoke Management Plan and administered by Oregon Department of Forestry. According to smoke management agreements, these burns must be conducted in such a way that avoids smoke impacts to Klamath Falls.

Woodstove emissions

Enforcement of the woodstove curtailment program is the key strategy that will help Klamath Falls comply with the standard. This includes a focus on habitually violating offenders, increased patrols on red and yellow days and increased awareness and public outreach regarding the curtailment program. The curtailment program already exists; however, effective enforcement is essential for success of the plan.

Some Klamath Fall residents were concerned about the impacts of more curtailment and contingency measures that would restrict use of all but the newer and cleaner-burning fireplaces during winter months. If the contingency plan is triggered under the proposed rules, only "certified" fireplaces, or those with particulate emissions below 5.1 grams per kilogram, may be used between November and March, with exceptions for holidays. DEQ understands that Klamath Falls residents have the burden of complying with curtailment ordinances to reach the standard. However, DEQ has worked with the local community to replace as many uncertified woodstoves as possible. DEQ will continue these efforts in the future since the only way to meet the standard is through reductions in residential wood combustion emissions. Fireplace emissions contribute significantly to particulate levels above the standard. Because residents generally do not rely on fireplaces for essential heating needs, they are the preferred source of emission reductions for a contingency measure.

Several comments submitted questioned why DEQ did not include in the attainment plan additional wood burning strategies that were recommended by the Klamath Falls Advisory Committee. DEQ collaborated with the Klamath County Commissioners to develop the best, most acceptable strategies for the community. While DEQ recommended adding strategies to achieve a greater margin of compliance, the Klamath County Commissioners decided that the strategies chosen were sufficient to achieve compliance with the standard. DEQ agrees the proposed strategies are sufficient but recognizes that by not adopting the full suite of strategies recommended by the advisory committee, the Klamath County

Commissioners have elected to reduce the safety margin for compliance with the PM_{2.5} standard. A smaller safety margin or buffer for compliance increases the chance that the community will not achieve healthy air as scheduled and also experience the additional burdens of the contingency measures.

Public outreach

DEQ held two public hearings in Klamath Falls on Aug. 21, 2012, one during the day and one in the evening. Results of public input are provided in attachment C. In response to comments received during the public comment period, DEQ is proposing some changes to the rules and the plan. One change to the plan is prompted by EPA's comment on the effectiveness of the woodstove curtailment strategies. EPA believes that effectiveness is lower than what DEQ initially calculated, resulting in overall lower estimate of the final design value. This lower design value is still in compliance with the standard.

DEQ received a number of comments from industry and residents that expressed concerns about negative impacts on industry and the recovering economy. To minimize potential economic impacts of the proposed contingency measures, DEQ proposes to delete two of the industrial measures that are not critical for the contingency plan: the change in the grain loading emission limit from 0.2 grains per standard cubic foot to 0.1 grains per standard cubic foot, and the requirement to monitor operating conditions on wood products dryers. However, DEQ is maintaining the other contingency measure that requires continuous monitoring at wood fired boilers at large facilities. In case the attainment plan fails and DEQ must reconsider all the strategies and emission sources, this measure would be necessary to ensure compliance with industrial particulate limits and confirms the particulate contributions from industry.

Next steps

Plan implementation

If approved, DEQ would submit the revised rules to EPA as a revision to the Oregon Clean Air Act State Implementation Plan. DEQ will work closely with Klamath County Health Department to ensure its staff is aware of the importance of the curtailment strategies to the success of the attainment plan. DEQ will assist the Klamath County Health Department in designing public education materials and will continue to provide funding assistance to the county to implement the woodstove curtailment and information program. DEQ will continue to monitor for compliance with the PM_{2.5} standard at the Peterson School site. DEQ will train Eastern Region staff on implementation of and compliance with new regulations affecting permitted industrial facilities, and staff will in turn communicate the new requirements to permittees. Finally, DEQ staff will continue to collaborate with Klamath area local government, elected officials and the public to

track progress and implement a successful PM_{2.5} reduction plan.

Attachments

- A. Proposed rule revisions
- B. Summary of public comments and agency responses
- C. Presiding Officer's Report on Public Hearings
- D. Relationship to Federal Requirements questions
- E. Statement of Need and Fiscal and Economic Impact
- F. Land Use Evaluation statement

**Available upon
request**

- 1. Klamath Falls PM_{2.5} Attainment Plan
- 2. Klamath Falls Advisory Committee Report
- 3. Legal Notice of Hearing
- 4. Written comments received

Approved:

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