

### A. Site-Specific Alternative Standard

The NESHAP for chemical recovery combustion sources at kraft, soda, sulfite, and stand-alone semichemical pulp mills includes a HAP metals standard for existing sulfite combustion units, using particulate matter (PM) emissions as a surrogate for HAP metals emissions. The final rule requires existing sulfite combustion units to reduce HAP metals emissions, measured as PM, to a level less than or equal to 0.040 grains per dry standard cubic foot (gr/dscf), corrected to 8 percent oxygen (§ 63.862(a)(2)).

Following promulgation of the rule, Weyerhaeuser Paper Company requested that EPA issue a site-specific alternative standard under subpart MM for Weyerhaeuser's Cosmopolis, Washington sulfite pulp mill. The alternative standard would allow Weyerhaeuser to reduce HAP metals emissions from an onsite emission source called a hog fuel dryer in lieu of complying with the HAP metals standard for existing sulfite combustion units. The hog fuel dryer at the Cosmopolis mill is used to dry solid fuel, such as bark, prior to combustion of the fuel in an onsite boiler. The hog fuel dryer is not regulated under a NESHAP and appears to be unique. Compliance with the alternative standard will result in greater annual HAP metals emissions reductions, lower annual energy utilization, and lower compliance costs at the Cosmopolis mill than would have been achieved through compliance with the HAP metals standard for sulfite combustion units.

Weyerhaeuser's Cosmopolis, Washington mill is a magnesium-based sulfite mill with three chemical recovery furnaces. These three recovery furnaces are subject to the HAP metals standard in subpart MM for existing sulfite combustion units. The emissions from each recovery furnace are first routed through a multiclone to recover magnesium oxide (particulate) and then through a cooling tower followed by absorption towers to recover sulfur dioxide. Following the absorption towers, the emissions from the three recovery furnaces are combined and treated in an educted venturi scrubber before being emitted to the atmosphere through a common stack.

The recovery furnaces are subject to a Washington State permit PM limit of 0.1 gr/dscf. The applicable NESHAP limit of 0.040 gr/dscf, corrected to 8 percent oxygen, is more stringent and would supersede the State limit. The hog fuel dryer is also subject to a State permit PM limit of 0.1 gr/dscf. However, the hog fuel dryer is not subject to any

NESHAP. The hog fuel dryer is equipped with cyclones to reduce PM emissions. The alternative standard probably cannot be achieved without installation of a fabric filter, and Weyerhaeuser intends to replace the existing cyclones on the hog fuel dryer with a fabric filter after promulgation of the site-specific alternative standard.

Environmentally beneficial practices at the Cosmopolis mill include the use of oxygen delignification and elemental chlorine-free and oxygen bleaching. The load on the recovery furnaces has increased as a result of oxygen delignification and a decision by the mill to burn sludge from onsite wastewater treatment in the recovery furnaces. Although the mill recovers energy from burning the biosolids, this practice has resulted in an increase in PM emissions from the recovery furnaces. However, the mill is still able to consistently meet its State permit PM limit.

The sulfite recovery furnaces at the Cosmopolis mill are tested monthly for PM. Based on the monthly data collected during the past 12 years, the mill cannot consistently meet EPA's NESHAP standard for HAP metals from existing sulfite recovery furnaces (0.040 gr/dscf at 8 percent oxygen, measured as PM) without a significant investment in a new emission control device. Because the exhaust gas volume from the hog fuel dryer is much smaller than the exhaust gas volume from the recovery furnaces, Weyerhaeuser determined that it would be much less costly for the Cosmopolis mill to install more efficient controls to reduce HAP metals emissions from the hog fuel dryer than from the recovery furnaces. Weyerhaeuser estimates that the capital cost of controlling the emissions from the recovery furnaces would be approximately \$4 million (based on installation of a wet electrostatic precipitator) versus approximately \$1.3 million to control emissions from the hog fuel dryer (based on installation of a fabric filter). The operating cost of the fabric filter for control of hog fuel dryer emissions would be about the same as the operating costs of the existing mechanical cyclone, which the fabric filter would replace. Weyerhaeuser also estimates that the operating costs of the wet electrostatic precipitator for control of recovery furnace emissions would be approximately \$60,000 per year.

Weyerhaeuser conducted HAP emission tests to determine and compare the quantity of HAP metals emitted from the recovery furnaces (combined stack) versus the hog fuel dryer under current operating conditions. The recovery furnaces and

hog fuel dryer were tested for the following 11 HAP metals: antimony, arsenic, beryllium, cadmium, chromium, cobalt, mercury, manganese, nickel, lead, and selenium. Based on the results of the emission tests, the sulfite recovery furnaces collectively emit approximately 212 pounds per year (lb/yr) of HAP metals, and the hog fuel dryer emits approximately 441 lb/yr. (See Docket ID No. OAR-2002-0045.) Both the recovery furnaces and hog fuel dryer emit very similar types of HAP metals. For both emission sources, the top four HAP metals emitted were manganese, lead, chromium, and nickel, accounting for 98.5 percent of the recovery furnace HAP metals emissions and 98.9 percent of the hog fuel dryer HAP metals emissions. Manganese was the predominant HAP metal emitted from both sources. The recovery furnaces emitted 0.025 pounds per hour (lb/hr) of manganese, accounting for 86 percent of the recovery furnace HAP metals emissions. The hog fuel dryer emitted 0.10 lb/hr of manganese, accounting for 97 percent of the hog fuel dryer HAP metals emissions. (See Docket ID No. OAR-2002-0045.) None of these metals are added to the mill's manufacturing process but are naturally occurring metals present in the wood chips and hog fuel processed at the mill.

Compliance with EPA's HAP metals standard for existing sulfite combustion units would reduce HAP metals emissions from the recovery furnaces by about 30 percent using PM as a surrogate for HAP metals. Assuming the same emissions reductions are achieved for HAP metals as for PM, compliance with the HAP metals standard for existing sulfite combustion units would reduce HAP metals emissions from the recovery furnaces by approximately 64 lb/yr. As an alternative to controlling HAP metals emissions from the recovery furnace, Weyerhaeuser proposes that the hog fuel dryer at their Cosmopolis, Washington mill meet a PM emission limit of 10.0 lb/hr (with PM serving as a surrogate for HAP metals emissions), which is equivalent to a PM emissions concentration of 0.030 gr/dscf. The hog fuel dryer's current PM emissions concentration is 0.081 gr/dscf. Weyerhaeuser's proposed PM emission limit for the hog fuel dryer would require that the mill reduce PM emissions from the hog fuel dryer by approximately 63 percent. Assuming the same emissions reductions are achieved for HAP metals as for PM, the total HAP metals emission reduction for the alternative standard would be approximately 278 lb/yr, which is more than four times the HAP metals