

EPA relied, in part, on information from Portland cement kilns for its evaluation of ACI for use in lime kilns. However, the MACT limit for cement kilns is roughly 10 times higher than the limit EPA set for lime kilns, so it is unclear if results in cement kilns can accurately predict efficacy in meeting the much lower lime D/F standard for the lime industry.

EPA's finding that the extremely low D/F standards it set are achievable for the lime industry using untested ACI technology was unreasonable, and thus the technology should be deemed unavailable.

Organic Hazardous Air Pollutant (oHAP) Emissions

EPA has also set an extremely low standard for oHAPs. Emission of these pollutants can vary widely, even in a single kiln, due to differences in the raw materials and fuels used. Even with very low emissions—and acceptable risk with an ample margin of safety—an unusual “spike” of one organic material could cause exceedance of the oHAP standard even when treatment technology is in use.

Regenerative Thermal Oxidation (RTO) is the control technology that EPA states would be used to control oHAP emissions. RTOs have not been installed on any lime kiln for oHAP control. RTOs have multiple technical issues which make their use impractical and technically infeasible. For example, sulfur dioxide (SO₂) in the kiln exhaust will need to be removed by a wet scrubber to prevent oxidation of SO₂ to SO₃ in the RTO combustion chamber and creating acid mist and visible emissions. Most lime kilns do not currently utilize a wet scrubber.

The normal maximum RTO operating temperature is between 1600 and 1700 degrees F. Thus, the flue gas from a lime kiln will need to be reheated following the cooling gas treatment for D/F described above. Given the need to scrub the exhaust gas to remove SO₂ before the RTO, a large amount of clean fossil fuel energy (e.g., natural gas) will be required to reach the RTO minimum operating temperatures. Many lime plants may have insufficient or unavailable supplies of natural gas to support the use of an RTO. This will require adding infrastructure at additional and substantial cost. In some cases, new natural gas pipelines would need to be constructed, and easements obtained to bring the fuel to the lime plant across private or public lands or national forests. An RTO will also require additional power demand and infrastructure that may not be available at a given lime plant. An RTO will also require permitting.

Thus, at present, it has not been established that effective technology is available to implement the standards EPA set for oHAPs.

Hydrogen Chloride (HCl)

To treat HCl, EPA finds that lime plants will need to use dry sorbent injection (DSI), in which lime product is injected into the kiln gases to remove HCl. While this technology has been used in other industries to treat HCl, prior to EPA's final rule it was not in use in the United States at any lime kiln. This means that EPA's projections of the feasibility and costs of using