

Facility J

A cement kiln is located in the State of Mississippi. The State of Mississippi recently adopted its version (which happens to be an exact copy of the federal rule) of the NSR reform regulations. This Facility is an **existing major source for prevention of significant deterioration (PSD) purposes** and has an existing title V permit. You recently got a call from the Facility stating that they believe that they can make a fuel substitution in their cement kiln that will allow them to save money, increase energy efficiency and may not increase the amount of PSD-regulated pollutants from the operation. The fuel that they are considering adding is petroleum coke in place of a portion of the coal that is combusted in the process. The specific pollutant of concern is sulfur dioxide (SO₂). As a general rule, we know that SO₂ emissions tend to go up when such a transaction takes place as petroleum coke generally has greater sulfur content than coal. Cement kilns are an interesting example of multiple chemical reactions that take place simultaneously and have different results. The Facility has continuous emissions monitors that monitor SO₂ emissions continuously. The Facility has already conducted a test burn at stated conditions and has convinced itself that SO₂ emissions can be made to remain steady by adding more oxygen to the back end of the process where cement klinker is set. It wasn't necessary per the regulations for them to do so but they have contacted you to obtain your input with respect to the issue. You are convinced that their approach is sound and now may need to do any of the following: revise the Facility's existing title V permit, require a PSD permit with a PSD best available control technology (BACT) analysis, set a potential to emit avoidance limit for SO₂ emissions since the Facility would be increasing its potential emissions of SO₂.

1. First question - do you need to revise the title V permit? If so, with what modification technique that we discussed and what would you put in the title V permit?
2. The Facility is an existing major source for PSD, so we know that there has been some additions to making PSD applicability. What process could the Facility go through for PSD applicability? Remember, there are now multiple choices for PSD applicability. What would you recommend to them?

Facility K

Facility K is a sister facility to Facility J but it is located in the State of Alabama a few miles from Facility J (that is Facility K is a cement kiln). The State of Alabama has not yet adopted its version of the NSR reforms. Therefore, all considerations must be made under the existing PSD regulations put into place in the early 1980s. Facility K sees what Facility J has done and believes that it can do the same thing with respect to swapping fuels (petcoke for coal) and save money and increase energy efficiency (by that petcoke has a higher BTU value than coal for the same volume of fuel). Now, answer the same two questions from above:

1. First question - do you need to revise the title V permit? If so, with what modification technique that we discussed yesterday and what would you put in the title V permit?
2. The Facility is an existing major source for PSD. What process could the Facility go through for PSD applicability?

The two facilities are real. The 1st example is real. We could've made this evaluation more complex by taking minor source preconstruction requirements into account and by adding the fact there is another sister facility in South Carolina that is evaluating the same idea. Thank you for your participation!