

## Early Data Could Spur Push for Risk-Based EPA PM Air Standard

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CHICAGO – Early data from a major research effort could eventually form the basis for calling on EPA to end its “mass-based” approach to setting particulate matter (PM) ambient air standards regulating all PM equally, a key EPA advisor told the recent Health Effects Institute’s annual conference here April 16. Instead, the data could allow a more source-specific, risk based approach that targets the biggest PM sources. A California air district is already floating a risk-based method for regulating PM, but the plan is prompting push-back from environmentalists. ***Particulate Matter, Page 3.***

CHICAGO – Early data from a major research effort could eventually form the basis for calling on EPA to end its “mass-based” approach to setting particulate matter (PM) ambient air standards regulating all PM equally, a key EPA advisor says, and instead push a more source-specific, risk-based approach that targets the biggest PM sources.

Morton Lippmann, from the New York University School of Medicine and a member of EPA’s Clean Air Scientific Advisory Committee PM review panel, told the Health Effects Institute’s (HEI) annual conference here April 16 that early epidemiological results from the research suggest that fine particulate matter (PM<sub>2.5</sub>) from coal combustion and traffic appear to pose the biggest risks to public health, and that may warrant focusing PM regulations on those types of emissions.

EPA may soon face a test on how to assess such an approach. The San Joaquin Valley, CA, air district is pursuing a plan that would allow it to determine that controlling ammonia and other emissions from agricultural operations should not be prioritized as the pollutants do not present immediate PM health risks (*Clean Air Report*, March 29).

California’s Air Resources Board and the San Joaquin Valley Air Pollution Control District are slated to hold a technical modeling symposium on the plan April 27, followed by a “workshop” on the plan April 30.

Environmentalists are opposing the California plan, saying it might violate the air act and allow the district to avoid adopting new controversial rules targeting ammonia and other emissions tied to farms and confined animal facilities. But the new research findings could eventually help supporters of the plan defend it.

Consideration of the new approach comes as EPA is currently reviewing its PM<sub>2.5</sub> national ambient air quality standard (NAAQS) of 15 micrograms per cubic meter (ug/m<sup>3</sup>) and agency staff have said science supports the limit to a range of 11-13 ug/m<sup>3</sup>.

But Lippmann said that based off preliminary epidemiological finding of mortality associated with PM<sub>2.5</sub> exposure, “Little of the annual mortality excess is attributable to other nationwide sources, so one can further question the benefit of more stringent limits, such as 11 to 13, as a means of reducing health impacts.”

Health risks in the results that Lippmann discussed at the event were primarily attributed to PM<sub>2.5</sub> from coal combustion in the Northeast, he said. Traffic sources also “need further examination, especially for residents in the largest metropolitan areas where significant populations live near major roadways,” he said.

Lippmann also noted that there are some potential risks from oil combustion localized in coastal areas and that “would be where to put the emphasis if you’re going to reduce the health impacts.”

Lippmann said the findings, from an HEI study known as the National Particle Component Toxicity (NPACT) Initiative, “support the plausibility that fine particles are affecting human health.”

Speaking at HEI, George Thurston of the New York University School of Medicine – and a member of CASAC’s sulfur oxides and nitrogen oxides review panels – said the NPACT research he is working on “most consistently” associated PM<sub>2.5</sub> exposure with mortality due to reduced blood supply of the heart muscle.

Long-term exposure is mostly from PM<sub>2.5</sub> from coal combustion, and the least with PM<sub>2.5</sub> from soil or wood burning. Long-term exposure to PM<sub>2.5</sub> from traffic gives “mixed” results, Thurston said.

The data suggest that “fossil fuel combustion sources and their pollutant tracers were generally more consistently associated with morbidity and mortality than non-fossil fuel sources of PM<sub>2.5</sub>,” he added.

EPA has long faced calls to revise its approach to setting its NAAQS for PM, which is made up of several different pollutants. Because the composition of PM is not tied to one pollutant or one emissions source, the agency currently sets mass-based PM NAAQS that aim to reduce overall levels of PM without targeting a particular source – such as a coal-fired power plant or mobile sources.

Data tying the main health risks from exposure to specific sources could therefore help EPA adopt a new approach that targets PM with a source-based approach.

Such an approach could win the support of industries that emit low levels of PM, or that are deemed under the NACT study to emit pollutants included in PM composition that do not pose large health risks. If EPA were to drop its mass-based PM rules it would likely help those industries avoid being subject to stricter, potentially highly expensive pollution controls, if the agency decides to tighten its PM<sub>2.5</sub> NAAQS in the future.

Moving from a mass-based approach to source-specific regulations could also get the backing of some states who would likely fight a tighter PM NAAQS. Some states argue that EPA continues to ratchet down its ambient air standards even when existing levels are within the range to adequately protect public health. EPA’s NAAQS are a concern for states as they must craft state implementation plans (SIPs) for meeting the standards.

Whenever EPA tightens a NAAQS, states have to identify additional sources of pollution within their control that they will impose stricter controls on to help reduce emissions and cut pollution levels. States are largely preempted by EPA from regulating mobile source emissions, so those SIP controls tend to come through imposing new pollution limits on industries – which critics say creates major costs and can drive businesses away.

However, the approach could draw concern from the coal combustion industry and either the fuel or automobile industries. If the NACT findings ultimately help to justify a move toward source-specific regulations, those sectors could face more stringent emissions controls in order to reduce their PM output.

Environmentalists are also likely to raise concerns about the approach if they believe that risk-based air plans such as the pending California district effort – could potentially allow some sources to escape stringent emissions controls if their contributions to overall PM<sub>2.5</sub> formation are not determined to pose significant human health risks.

Even with the early findings, Lippmann noted some data limitations, saying there is a need for more epidemiological studies that can assess how PM affects other human systems beyond the cardiovascular.

Lippmann also said there is a need for a better chemical speciation monitoring network, which he argued is currently too limited with too few monitoring sites. A PowerPoint presentation accompanying Lippmann’s remarks said, “A more robust monitoring network, if implemented, will make it possible to determine whether some of the associations of effects with PM constituents are actually causal or are more likely to be due to other co-constituents whose concentrations are closely correlated with the monitored species” – which he said would help in the setting of PM NAAQS

“If we had the more robust network we could have better targeted NAAQS and reduce the public health burdens and adverse health effects,” by targeting the PM sources that pose the highest risk, Lippmann said.

HEI President Dan Greenbaum said at the event, “Currently available evidence does not allow us to say that there’s one component that we want to deal with” when regulating PM. “That doesn’t mean that that’s going to be the final answer,” as EPA under the Clean Air Act must review its NAAQS every five years. “This question of whether some of the components will have higher toxicity is going to gain increasing interest over time, in part because as controls are put into place the question will come: is each succeeding proposal of public health benefit?” he said.

Although several presenters at the conference highlighted the early NACT findings, Bert Brunekreef of the University of Utrecht cautioned, “This is still so much work in progress we can’t really make any

concluding remarks.” Some of the conclusions may change a little bit” and called it a “great resource for future work.”

In a presentation accompanying his remarks, Brunekreef noted, “Further discussion needed in context of other multi-pollutant studies so that we can try to start appreciating the whole suite of studies that have looked at particle composition in terms of explaining health effects.” – *Anthony Lacey*

## **Fireworks win out over lasers for Fourth of July**

By Mike Eiman

Hanford Sentinel, Friday, May 11, 2012

HANFORD — After careful consideration, the Hanford Chamber of Commerce and Kings Fairgrounds management have decided Fourth of July will be ablaze with fireworks after all.

For the past month, the two groups have been weighing the pros and cons of a laser light show versus a tried-and-true fireworks display. A \$10,000 grant awarded by the San Joaquin Valley Air Pollution Control District made the switch to environmentally friendly lasers seem like a good deal, especially considering that Hanford’s Fourth of July celebration has faced cancellation in recent years because of financial constraints.

The grant sought to cut down on pollution created by fireworks shows, citing a spike in Valley air pollution on July 4 and 5.

“We looked at that, too,” said Kings Fairgrounds CEO Angie Avila. “But when you have a show that’s going to last 20 minutes, by the time the people drive here and go inside, it’s already passed. We appreciate the grant the air quality board would have given us, but it just didn’t work for us this year.”

Avila said she decided against the laser show when she learned that the initial \$15,000 quote would only have paid for about 15 to 20 minutes of laser beams — no pictures or flashy special effects. Paired with some kind of entertainment, the show might have stretched to 30 minutes.

“The city was planning the laser show to happen in front of the Civic Auditorium,” Avila said. “There would have been performers on a stage or in front of the Civic. And then you would have your light beams. The laser light [representative] had said that’s what he was planning on doing here. I told him that’s not what we were planning. We were planning a laser show, which would be a really spectacular laser show like his website looked like.”

That’s when Avila learned that a more awe-inspiring show would have cost upwards of \$34,000, virtually nullifying the air pollution district’s grant and defeating the point of the fairgrounds’ participation. Plus, the more expensive show might have floundered without perfect weather on the Fourth.

“He was afraid that if we got any kind of a breeze it would blow the fog away from the fog machines, and then you couldn’t see the laser show,” Avila said.

Avila said the estimate she got for a fireworks show was about \$18,000. When she began looking for sponsors to help pay for it, Midway of Fun, the company that provides carnival rides at the Kings Fair, offered to pay for half. The other half would be covered by the Hanford Rotary Club, Hanford Chamber of Commerce and members of the community.

The addition of the carnival sponsorship means that the Fourth of July celebration will include a “sneak preview” of the Kings Fair. For the first time, patrons will have to pay \$5 for admission and \$2 for parking, but they will be able to enjoy all of the fair’s carnival rides and food vendors before the fireworks show. The rest of the fair attractions won’t start until the fair officially opens on July 5.

“If we had the lasers, we wouldn’t have the food or the carnival rides,” Avila said.

Pyro Spectaculars, a worldwide pyrotechnics company, will handle the fireworks. Company district manager Mark Silveira said the company does more than 400 Fourth of July shows across the country. He said the Hanford show will include a combination of aerial and low-level fireworks.

“To give you a taste of it: It would be like a Grizzlies game on steroids,” Silveira said.

He argued that professional fireworks shows are not a good place to try to cut down on pollution. He said that eliminating fireworks from the city celebration would simply encourage more people to buy their own.

"I've been doing fireworks for almost 40 years," he said. "If the fireworks went away, Big Johnny would sit at home all day, barbecue and drink beer. And then when it got dark, Big Johnny would go outside and help Little Johnny light the fireworks and someone would get hurt. I'd rather have them come and see a professional fireworks show done where it is controlled, where it is safe."

## **Solar powered accumulator could help oil companies meet new emissions rules**

By John Cox, Californian staff writer

Bakersfield Californian, Friday, May 11, 2012

One question was bound to come up Thursday as Dan Stotler was showing off the prototype of a solar-powered accumulator, a vital piece of equipment used in oil fields to protect against well blowouts.

The question was this: What are you supposed to do on cloudy days?

Enough people from the local oil industry asked, in fact, that Stotler devised a snappy answer.

"My joke was ... when the cloud comes in you get another day off," said the owner of Stotler Co., an oil field equipment sales, service and rental business on Alken Street.

He wasn't being serious, though it is true that oil companies tend to shut down when rainy conditions pose any threat to worker safety. The real answer to their question was that the bright red prototype on display Thursday holds enough power to engage a blowout preventer multiple times before it needs to be recharged. Besides that, it has manual and nitrogen-powered backup systems.

If anything, the question demonstrates how much interest oil companies are taking in equipment that doesn't put out any exhaust.

Oil producers are under the gun these days to prepare for new state regulations expected to penalize companies that do not substantially reduce their emissions. The program, scheduled to go into partial effect later this year, would set up a cap-and-trade system that could mean steep new costs for oil production and other industries.

Accumulators, which supply hydraulic pressure to close blowout preventers during work breaks and emergencies, normally run on diesel oil or gasoline. Companies that decide to switch to solar powered accumulators won't do so to save money on fuel, said Larry Parks, director of global sales for the solar accumulator's manufacturer, Houston-based Consolidated Pressure Control.

"It's not the cost," Parks said. "It's the emissions." He added that California regulators also require oil companies to produce detailed reports on how often they start up an accumulator and how long it's left running.

The copy machine-size accumulator that took center stage Thursday is not for sale; CPC hasn't decided whether to begin production of the unit. If it does, Stotler will have exclusive rights to sell it locally.

Still, Parks and Stotler said representatives of local oil field service companies and major oil producers, including Chevron Corp., offered helpful suggestions on possible improvements. One of them had to do with the placement of valves on the accumulator, they said.

CPC's presentation is not Kern County's first exposure to sun-powered oil field equipment. Last year, Fremont-based GlassPoint Solar partnered with Denver's Berry Petroleum Co. to test a solar steam generator at a McKittrick oil field. The pilot project was greeted by industry representatives as a green solution with the potential to save money.

Parks said more solar-powered oil field equipment is coming sooner or later.

"You're going to see a lot more solar in the oil industry," he said.