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Kansas Department of Health and Environment

Statement of Wayne Penrod
Concerning the Proposed Kansas Air Quality Construction Permit
Of Sunflower Electric Power Corporation

August 2, 2010

Good evening Mr. Chairman. My name is Wayne Penrod and I am the Executive Manager, Environment for Sunflower. The Sunflower staff and our consultants have been working on permitting this plant since the summer of 2000. Our permit team has run models, interviewed vendors, and gathered and reviewed large amounts of information in order to prepare the permit application you have reviewed. We appreciate the long hours that KDHE people have spent thoroughly reviewing and evaluating this application.

The federal government enacted a series of clean air acts, beginning with the Air Pollution Control Act of 1955, and followed by the Clean Air Act of 1963 (CAA), the Air Quality Act of 1967, the Clean Air Act Extension of 1970, and Clean Air Act Amendments in 1977 and 1990. Initial legislation followed the air pollution episodes that occurred in Donora, PA, and In London, England, and other cities in the late 1940s and early 1950s. The continuing amendments to this body of law and the resulting regulations arising from it have occurred as Congress and later the Environmental Protection Agency (EPA) have kept our laws and regulatiosn synchronized with the growing body of knowledge related to public health.

These continuing changes come about, in part, because The Clean Air Act requires EPA to periodically review the latest scientific information and standards. Before new air standards are established, policy decisions

undergo rigorous review by the scientific community, industry, public interest groups, the general public and the Clean Air Scientific Advisory Committee (CASAC).

Using all of their professional resources, EPA has determined during the last 55 years what constitutes healthful ambient air. Those results are primarily captured in what is known as the National Ambient Air Quality Standards (NAAQS). These standards have been designed to ensure that not only is human health protected but an adequate safety margin exists in these standards to protect sensitive populations.

Those changing standards have resulted, in the last ten years, in a complete replacement of the models used to determine the impact of new sources with those that take advantage of the higher computing power of modern computers, in the development of newer more appropriate characterization of those constituents of particulate matter that impact human health, and in revisions now to all of the principal NAAQS standards, including the new and first ever 1-hour averaging period for sulfur dioxide (SO_2) and nitrogen oxides (NO_X) pollutants that are emitted from sources such as Holcomb. Three of these changes have occurred in the last six months.

Sunflower and its consultants have incorporated every one of these NAAQS revisions into the analyses performed as EPA has acted to promulgate them. The area evaluated for NAAQS impacts, consistent with EPA guidance, extends 50 km around the facility. The facility that Sunflower proposes will satisfy all of the requirements of the CAA relating to the NAAQS.

Just as the regulations improving air quality and protecting public health have changed during the last 40 years, it should be apparent that the

modern pulverized coal power plant is not the power plant that would have been constructed in the 50s, 60s, 70s, or even the 80s. Designers, operators, and regulators together continue to make great strides in efficiency and in control technology used to reduce the emission rates of pollutants. However, if you have not toured a modern plant you might be incorrectly reminded of what the stack emissions from these same facilities looked like 50, 30, perhaps in some cases even 20 years ago. Modern high efficiency fabric filters remove better than 99.8 % of filterable particulate. As an example, when we perform stack tests on the current H1 unit, test personnel repeatedly remark that the laboratory filters on which the particulate matter is collected are almost indistinguishable from unused ones.

Those who oppose this project would have you conclude that this new coal-fired power plant will perform like one constructed decades ago assuming that you would naturally oppose this permit. If that were the project that was being evaluated, I'd oppose it, too. However, nothing could be farther from the truth; today's modern pulverized coal plant is a very clean, low-cost, and reliable source of essential electric energy. The existing Holcomb 1 unit is a prime example of a modern plant, and the proposed Holcomb 2 unit will be even cleaner, with much tighter standards to which it must perform.

You may have read that the prevailing wind will transport whatever fine particulate (and mercury) is emitted into northeast Kansas implying that this project is presumed to have a large impact on the air quality in Johnson County and the Greater Kansas City Metropolitan Statistical Area (MSA). Actually that's not true either. First, the prevailing winds at Holcomb, at the chimney elevation, are from the north or from the south. Second, we can

estimate, using a modeling technique that is used to determine a source's impact in National Parks, what the impact might be on the Kansas City MSA. This is not a required part of any analysis for the project.

In addition to small amounts of filterable PM_{10} and filterable $PM_{2.5}$, there are small amounts of SO_2 and NO_X gases emitted from the plant that do react in the atmosphere and form $PM_{2.5}$. This reaction can be predicted using advanced atmospheric chemistry models. As an example, when the 3-unit expansion project was under consideration, we determined that the 8th highest 24-hour modeled $PM_{2.5}$ impact in Johnson County was about 0.05 $\mu g/m_3$. With the recently reduced 24-hour $PM_{2.5}$ standard (which deals with particulate matter that is less than 1/30th the diameter of a human hair), at 35 $\mu g/m_3$ the project's impact in Johnson County would be less than 2/10ths of one percent of the standard. With the reduced size of the project, the impact would now be expected to be well below 1/10th of one percent.

Another way to think about the H2 impact is to compare rough estimates of the total level of pollutants emitted in your county (1999 data) to those in Finney County.

	Johnson	**Holcomb 2**	**Finney**
Pollutant	**Tons**	**Tons**	**Tons**
Sulfur Dioxide	4,503	3,240	2,826
Nitrogen Oxides	37,769	1,914	13,055
PM10	41,305	742	10,036
PM2.5	9,858	722	2,126
CO	159,216	4,579	14,054
VOC	22,238	119	2,765
Total	**274,889**	**11,316**	**44,862**

Keep in mind that the impact of these pollutants in Johnson County does not include those emitted from the eight coal-based power plants in close proximity to Kansas City.

I would like to request that KDHE swiftly approve the draft permit as presented. I can personally speak for the years of effort that the agency and the project partners have invested in this process, and I can also confidently say that this permit is in full compliance with all relevant rules and regulations.