



# SUNFLOWER ELECTRIC POWER CORPORATION

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## **Kansas Department of Health and Environment**

Statement of Kyle Nelson  
Concerning the Proposed Kansas Air Quality Construction Permit  
Of Sunflower Electric Power Corporation

August 2, 2010

My name is Kyle Nelson. I am the Senior Vice President and Chief Operating Officer for Sunflower Electric Power Corporation. I support your approval of the proposed permit and would like to discuss various technology considerations we reviewed before selecting the configuration contained in the permit before you.

All Holcomb project participants are load serving entities with a need for additional base load capacity. Project partners reviewed numerous generation technologies that could serve their needs. Major variables considered included environmental performance, fuel price and price volatility, fuel availability, design reliability, capital costs, financing requirements, operation and maintenance costs, technology availability, and regulatory risk. It's important to understand that Sunflower and its project partners are not technology biased or fuel biased, but as rural electric cooperatives, each participant is strongly energy price biased.

Our levelized busbar analysis showed the most affordable base load generation configuration would be based on supercritical pulverized coal (SCPC) technology. A supercritical thermal cycle was selected by the project based on improved fuel efficiencies, superior environmental performance, and lower water consumption when compared to alternative designs. The proposed unit would be among the lowest emissions coal-fired utility units in North America.

Other technologies evaluated included circulating fluidized bed coal configurations, integrated gasification combined-cycle (IGCC) configurations, wind

configurations, nuclear power configurations, and various natural gas based configurations.

Circulating fluidized bed (CFB) boilers are most typically used for lower quality fuel applications and have not been scaled up to sizes required for the Holcomb project. IGCC based configurations offers promising coal-based technology, but currently IGCC designs are not available in a size required for the Holcomb project, are not commercially proven using Powder River Basin (PRB) coals, and are estimated to have installed capital costs approximately 20% higher than conventional coal designs.

While a lot of recent attention has been focused on wind generation, this technology is not capable of providing base load service because of the inability to schedule output and is further disadvantaged by low capacity factors and high initial costs as compared to other technologies. Based on these facts, wind generation technologies were eliminated as a base load resource option in the screening process.

Nuclear power configurations were not seriously considered because of current regulatory challenges, time required to permit, current scale of available designs, and extremely high initial capital costs. However, Sunflower and other cooperatives are actively supporting efforts to develop more affordable modular nuclear technologies which may be a practical generation resource option in future decades.

While natural gas combined-cycle (NGCC) technologies offer a feasible option, levelized busbar costs from natural gas units historically have been more expensive due to higher fuel prices and substantial fuel price volatility as compared to coal. While some project opponents continue to advocate the use of natural gas promising new recovery techniques, longer term supplies, and reduced market price volatility, despite record natural gas storage volumes and a recessed economy gas prices have spiked to nearly \$13 per mmBtu and dipped to less than \$3 per mmBtu in the past 30 months.

During this same 30 month period, Powder River Basin (PRB) coal index price averaged less than \$0.75 per mmBtu. PRB coal is a domestically abundant and affordable fuel ideal for electric power generation with current estimates of several hundred years of mineable reserves in the United States providing substantial energy

security and independence for the electric grid. PRB coal offers unmatched economies over other fuels including natural gas and even other coals. Surface mining techniques used in the PRB provide a competitive advantage over other coals while also avoiding mining risks often associated with deep, long-wall mining techniques or the current controversies associated with mountain top removal mining techniques used in the eastern United States.

Once again, I urge you to approve Sunflower's permit application as proposed, and I thank you for the opportunity to speak today.