

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

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| APPLICATION OF EAST KENTUCKY POWER |) | |
| COOPERATIVE, INC. FOR A CERTIFICATE OF PUBLIC |) | CASE NO. |
| CONVENIENCE AND NECESSITY FOR THE |) | 2005-00417 |
| CONSTRUCTION OF A FLUE GAS DESULFURIZATION |) | |
| SYSTEM ON SPURLOCK POWER STATION UNIT 2 |) | |

O R D E R

On October 7, 2005, East Kentucky Power Cooperative, Inc. (“EKPC”) filed an application, pursuant to KRS 278.020(1), requesting a Certificate of Public Convenience and Necessity (“CPCN”) to construct a flue-gas desulfurization sulfur dioxide control facility (“scrubber”) at Unit 2 of its Spurlock Generating Plant (“Spurlock 2”) in Mason County, Kentucky.

EKPC maintains that it will need this facility to be operational by 2010 in order to comply with the requirements of the Clean Air Act Amendments of 1990 (“CAA”)¹ and the Clean Air Interstate Rule (“CAIR”), even if low-sulfur compliance coal is burned at Spurlock 2. Installing the scrubber will allow Spurlock 2 to fuel-switch from low-sulfur compliance coal to Northern Appalachian and Illinois Basin high-sulfur coal. EKPC is proposing to install the scrubber by 2008 to achieve an economic advantage at Spurlock 2 by fuel-switching from the higher priced, low-sulfur coal that is burned there

¹ As amended, 42 U.S.C.A. § 7401, *et seq.*

now to lower priced, high-sulfur coal. The total estimated cost of the proposed scrubber is \$159 million.

The scrubber system proposed at Spurlock 2 involves the use of a wet flue-gas desulfurization system and a wet electrostatic precipitator. The system includes a state-of-the-art open spray tower design that has been used successfully at other coal-fired generating units. The scrubber will allow a greater range of coal to be burned at Spurlock 2, while reducing emissions of sulfur dioxide (“SO₂”) sulfur trioxide, mercury, and total particulate. EKPC intends to finance the Spurlock 2 scrubber through the Rural Utilities Service by a long-term guaranteed loan from the Federal Financing Bank.

EKPC previously installed a scrubber on Spurlock 2 in 1982 so it could burn high-sulfur coal. However, after operating for approximately 9,000 hours, the scrubber was shut down and deactivated due to economic considerations. At that time, the price differential between low-sulfur coal and high-sulfur coal was not great enough to offset the cost of operating the scrubber, so EKPC resumed burning low-sulfur coal. Since that time, EKPC has regularly evaluated the comparative costs of burning low-sulfur coal versus scrubbing high-sulfur coal, and, until recently, has found that burning low-sulfur coal is more economical.

In anticipation of the need to meet the 2010 emission requirements, and in recognition of the escalating prices for low-sulfur coal, EKPC began in 2004 to investigate its options for reducing the SO₂ emissions at Spurlock 2. EKPC identified a number of options available at Spurlock 2 and conducted economic analyses of the options which included continuing to burn low-sulfur compliance coal with no scrubber, and fuel-switching to high-sulfur coal with the installation of a scrubber. As part of its

analysis of burning high-sulfur coal with a scrubber, EKPC considered rebuilding the existing scrubber which used lime as the reagent, rebuilding the existing scrubber to use limestone as the reagent, and building a completely new scrubber using limestone. The economic impact of the operational date of a scrubber was also analyzed to determine if there would be benefits from having a scrubber operational prior to 2010. In narrowing its options, EKPC eliminated the use of lime as the scrubber reagent due to higher estimated annual maintenance costs than by using limestone.

EKPC's economic analyses covered the years 2008-2036, and reflected estimates of future coal prices that had been prepared by a fuel consultant. Other major factors considered in EKPC's economic analyses were capital costs, operating and maintenance expenses, reagent costs, projected costs for SO₂ allowances, and landfill costs.

EKPC solicited bids for the two options of rebuilding the existing scrubber to use limestone as the reagent and installing a new scrubber to use limestone. Two contractors submitted bids on each option, with the rebuild option being priced 12-17 percent higher than a new installation. The reasons given by the bidders for pricing the rebuild option higher were the unknown condition of the existing equipment, the need for additional equipment due to the design of the existing scrubber, and the increased risk from refurbishing existing equipment to meet the required performance standards and emission requirements. Utilizing the results of its bid solicitation, EKPC's economic analyses showed that installing a new scrubber would be less costly over the study period than continuing to burn low-sulfur coal.

Based on the evidence of record and being otherwise sufficiently advised, the Commission finds that, starting in 2010, EKPC will have to substantially reduce its SO₂ emissions from Spurlock 2 or utilize a substantial number of emission allowances to comply with the CAA and CAIR emission requirements. The economic analyses performed by EKPC indicate that it properly reviewed all viable options, including continuing to burn compliance coal, rebuilding the existing Spurlock 2 scrubber, and installing a new scrubber. The net present value analyses show that installing a scrubber by 2008 and burning high-sulfur coal will result in a total cost savings of approximately \$338 million over the 29-year study period versus continuing to burn low-sulfur compliance coal. Although the scrubber will require a substantial capital investment and will result in increased costs for operation and maintenance, limestone, energy replacement, and landfill, these increased costs will be more than offset by cost reductions from the use of lower priced high-sulfur coal and the need for substantially fewer emission allowances.

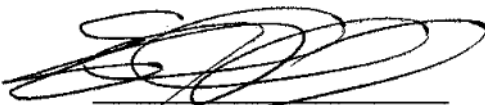
One by-product of the limestone scrubber will be disposable-grade gypsum. EKPC has explored the potential to upgrade the scrubber facility to produce wallboard-quality gypsum, but concluded that there will be no market for such a product in 2009 after the scrubber becomes operational. The Commission finds that EKPC should periodically review this issue and the market for gypsum. In the event that it becomes economically feasible for EKPC to market gypsum, the appropriate equipment should be installed to produce wallboard-quality gypsum.

IT IS THEREFORE ORDERED that EKPC is granted a CPCN to construct a limestone scrubber and associated equipment at Spurlock 2.

Done at Frankfort, Kentucky, this 18th day of April, 2006.

By the Commission

ATTEST:

A handwritten signature in black ink, consisting of several overlapping loops and a long horizontal stroke at the end, positioned above a horizontal line.

Executive Director