

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

APPLICATION OF EAST KENTUCKY POWER)	
COOPERATIVE, INC. FOR A CERTIFICATE OF)	
PUBLIC CONVENIENCE AND NECESSITY FOR)	
ALTERATION OF CERTAIN EQUIPMENT AT)	
THE COOPER STATION AND APPROVAL OF A)	CASE NO.
COMPLIANCE PLAN AMENDMENT FOR)	2013-00259
ENVIRONMENTAL SURCHARGE COST)	
RECOVERY)	

ORDER

On August 21, 2013, East Kentucky Power Cooperative, Inc. ("EKPC") filed an application, pursuant to KRS 278.020(1), KRS 278.183, and 807 KAR 5:001, Sections 14 and 15, requesting a Certificate of Public Convenience and Necessity ("CPCN") for the rerouting of certain duct work at its J. S. Cooper Generating Station ("Cooper Station") near Burnside, Kentucky, and approval of an amendment to its environmental compliance plan for purposes of recovering the costs of this project through EKPC's environmental surcharge. The Cooper Station consists of two baseload coal-fired electric generating units. Cooper Unit 1, which became operational in 1965, has a rated capacity of 116 megawatts ("MW") and Cooper Unit 2, which became operational in 1969, is rated at 225 MW of capacity. EKPC proposes to re-route the existing duct work for Cooper Unit 1 such that its emissions are able to flow to the Cooper Unit 2's Air Quality Control System ("AQCS") to enable Cooper Unit 1 to satisfy certain air emission regulations. The capital cost of the proposed project is estimated to be \$15 million, with

annual ongoing operating and maintenance costs of approximately \$2.6 million. EKPC plans to finance the proposed project utilizing Federal Financing Bank loan funds through a Rural Utilities Service-guaranteed loan. The anticipated cost to the average residential retail customer is approximately \$0.35 per month.

On September 20, 2013, the Commission issued an order establishing a procedural schedule, which provided for discovery on the application, an opportunity for the filing of intervenor testimony, discovery on intervenor testimony, an opportunity for the filing of rebuttal testimony, and a formal evidentiary hearing. The following parties were granted full intervenor status in this proceeding: Gallatin Steel Company ("Gallatin Steel") and Sierra Club and Sonia McElroy (collectively "Sierra Club"). A formal evidentiary hearing was conducted on January 14-15, 2014. EKPC and the Sierra Club filed post-hearing briefs on February 3, 2014, and Gallatin Steel filed a post-hearing brief on February 4, 2014. The matter now stands submitted for a decision. For the reasons stated below, the Commission will approve EKPC's application.

EKPC'S PROPOSED PROJECT

On September 4, 2007, EKPC entered into a consent decree ("2007 Consent Decree") with the United States Environmental Protection Agency ("EPA") in which EKPC agreed to install an AQCS at Cooper Unit 2 as full resolution of certain claims by the EPA against EKPC for violations of the federal Clean Air Act. Under the 2007 Consent Decree, EKPC had two principle options: (1) install and continuously operate sulfur dioxide and nitrogen oxide emission control systems at Cooper Unit 2 by June 30, 2012, and December 31, 2012, respectively or (2) retire and permanently cease operation of units 3 and 4 at its William C. Dale Generating Station ("Dale Station") by

December 31, 2012. EKPC ultimately elected to, and received Commission approval to, retrofit Cooper Unit 2 with an AQCS consisting of a Circulating Fluidized Bed Dry Flue Gas Desulfurization system, a selective catalytic reduction system, a pulse jet fabric filter, and other environmental control equipment.¹ The AQCS became operational in 2012 and was designed to achieve compliance with the specific requirements set forth in the 2007 Consent Decree.

EKPC states that subsequent to the 2007 Consent Decree, the EPA has imposed additional air emission regulations on power plants. EKPC points to the final Mercury and Air Toxics Standards (“MATS”), the Best Available Retrofit Technology (“BART”), and the Regional Haze State Implementation Plan (“SIP”). EKPC notes that MATS requires new and existing coal- and oil-fired electric generating units to meet emission limits for mercury, acid gasses, and non-mercury hazardous air-pollutant metals. EKPC further notes that the 1977 amendments to the Clean Air Act created a program for protecting visibility in certain classified areas, such as national parks. After the Clean Air Act was further amended in 1990 to include, among other things, requirements to address regional haze issues, the EPA promulgated regulations requiring Kentucky and other states to prepare Regional Haze SIPs. In 2012, the EPA approved Kentucky’s 2008 Regional Haze SIP, as amended in 2010. States were also required under the Clean Air Act to evaluate the use of retrofit controls for certain older sources. Specifically, the Clean Air Act required that certain categories of existing major stationary sources built between 1962 and 1977 install BART as determined by the state.

¹ Case No. 2008-00472, *Application of East Kentucky Power Cooperative, Inc. for a Certificate of Public Convenience and Necessity for the Construction of an Air Quality Control System at Cooper Power Station* (Ky. PSC May 1, 2009).

According to EKPC, the 2010 amendment to the Regional Haze SIP states that BART for Cooper Units 1 and 2 is dry flue gas desulfurization and pulse jet fabric filter technology, and the BART emission limit is a filterable particulate matter emission rate of 0.030 lb/MMBtu. Because the Regional Haze SIP BART particulate matter limit determination established an emission limit and the most stringent technology option, the EPA found that Kentucky had appropriately addressed BART for the Cooper Station.

According to its 2012 Integrated Resource Plan (“IRP”),² EKPC identified a need of up to 300 MW of capacity by October 2015, primarily to comply with MATS. In an effort to evaluate and assess a reasonable, least-cost alternative to meet the projected capacity need, EKPC initiated a Request for Proposal (“RFP”) on June 8, 2012. The RFP sought proposals for conventional projects with a capacity of at least 50 MW, or renewable projects with a minimum capacity of 5 MW. The RFP was published in widely circulated trade and industry publications and directed towards utilities, power marketers, project owners, and project developers. Proposals in response to the RFP were due by August 30, 2012.

As part of the RFP process, and because EKPC’s Power Production unit was expected to submit one or more self-build options in response to the RFP, EKPC retained the Brattle Group to serve as an independent procurement manager. As such, Brattle Group was to provide assistance to EKPC in developing and marketing the RFP, screen the proposals, select a short list of proposals, and report a recommended course of action. The Brattle Group worked with EKPC’s Power Supply planning staff and

² Case No. 2012-00149, *2012 Integrated Resource Plan of East Kentucky Power Cooperative, Inc.* (Ky. PSC Sept. 26, 2013).

utilized EKPC's analytical resources and data in developing its evaluation of the RFP proposals. To protect the integrity of the RFP process, EKPC's Power Production unit was segregated and not permitted to interact and exchange information with the Power Supply group. According to EKPC, the retention of the Brattle Group further ensured a fair, open, and non-discriminatory RFP process.

EKPC received over 100 proposals from 65 different entities through the RFP. Proposals included new natural-gas fired power plants either at existing EKPC sites or at other locations; the sale of existing gas- or coal-fired plants to EKPC; the sale of ownership interests in existing power plants; natural gas tolling agreements; cost-based power purchase agreements; energy-only contracts; capacity-only contracts; renewable power purchase agreements for wind, solar, biomass, landfill gas, and waste; and proposals for energy for coal waste and mine-mouth methane. In addition, EKPC's Power Production unit, with the assistance of Burns & McDonnell, also submitted several self-build proposals, including the proposed Cooper Unit 1 retrofit.

The Brattle Group evaluated the proposals based upon a net present value ("NPV") criterion. The NPV reflects the difference between the present value of the energy and capacity that a power-supply resource is expected to provide and the present value of the costs that EKPC would incur to obtain that energy and capacity. The NPV criterion is based on the fundamental fact that EKPC is a fully integrated member of the PJM Interconnection, L.L.C. ("PJM") and, therefore, EKPC sells all of its capacity and energy into the PJM market and buys all of the capacity and energy its members consume from the PJM market. The NPV is indicative of the value added by

a power-supply proposal; or stated another way, the expected reduction in net power-supply costs to EKPC's customers. The higher the NPV, *ceteris paribus*, the better.

The NPV analysis took into account variable cost pricing such as fuel cost projections, market price projections, and production cost analysis. The NPV also included an analysis of fixed costs, i.e., the purchase prices and investments associated with a power-supply proposal were deducted from the present value of the energy and capacity a proposal was projected to provide. The outputs from the variable cost modeling were then paired with the fixed-costs analysis and projections to develop an overall comparison of options.

In addition to a NPV analysis, an evaluation was conducted to take into account the size and duration of each power-supply proposal. This analysis was characterized as an NPV per megawatt-year, which consisted of a calculation of NPVs normalized for the size and duration associated with each proposal. Lastly, a benefit-cost ratio for facility and retrofit proposals was also performed, which established the ratio of the net present value of a power-supply proposal to the purchase price or required capital investment.

EKPC separated the power-supply proposals into groups with similar characteristics. These groups included purchase power agreements from conventional energy sources; ownership of generation resources; purchase power agreements from solar and wind generation; purchase power agreements from other renewable energy resources (landfill gas, waste, and biomass); and self-build. From these groups, EKPC created a short list of bidders by selecting the most attractive proposal in each group based on the NPV. The NPV of a purchase power agreement was calculated as the

present value of forecast energy revenues plus the present value of forecast capacity revenues less the present value of fixed and variable contract payments. The NPV of a facility purchase and sale proposal was calculated as the present value of net energy, reflecting energy revenues less fuel and variable operating and maintenance costs, plus the present value of capacity payments less the present value of fixed operating and maintenance costs and the purchase price. The proposals which made the short list included the following: (1) construction of a combined cycle natural gas combustion turbine; (2) a wind purchase power project; (3) a coal-waste-fired power plant purchase power agreement; (4) a single cycle natural gas turbine tolling arrangement; (5) an existing combined cycle natural gas purchase power agreement; and (6) the Cooper Unit 1 retrofit.³

Based on the recommendation from the Brattle Group, EKPC ultimately selected the proposal to retrofit Cooper Unit 1, which had the highest NPV of any proposal at \$46 million over a ten-year period. According to EKPC, the Cooper Unit 1 proposal would add substantial value for a modest investment and allow Cooper Unit 1 to comply with the Regional Haze SIP limitations, the BART requirements, and the MATS rule. The proposal would retain 116 MW of existing generation at an investment of \$15 million, which is roughly \$129/kW of capacity, as compared to \$600/kW to over \$1,000/kW for new generation. EKPC also contends that the proposed project will pay for itself in approximately five to six years; allow EKPC to leverage existing investments, resources, and operating expertise that already exists at the Cooper Station; enable EKPC to

³ A seventh proposal was also selected for the short list from a utility within Kentucky. The proposal was for a unit-contingent purchase from a coal-fired plant, but ultimately did not meet EKPC's requirement for providing a firm resource going forward and was not quantitatively attractive.

strengthen its financial condition; and preserve the jobs and the tax base provided by the Cooper Station.

ARGUMENTS

Sierra Club

The Sierra Club raised certain concerns relating to EKPC's proposed plan for meeting primarily MATS requirements. It specifically points to three "fatal flaws" in the application. First, it states that EKPC has failed to demonstrate the need for the project. In joining PJM, EKPC transitioned away from being a balancing authority required to have sufficient reserves to meet its own winter peak load and is now required to have enough reserve to meet the summer PJM peak load. The capacity required in the 2012 IRP became economic capacity, as opposed to capacity needed for reliability purposes. Even though EKPC's actual load did not change, as a PJM member, EKPC will have sufficient energy generation to meet the latest PJM load forecast through 2020 even if it retires the Dale Station Units 3 and 4 and Cooper Unit 1.

Second, the Sierra Club states that EKPC significantly overvalued Cooper Unit 1, failed in its RFP to consider the availability of demand-side management ("DSM") alternatives, and arbitrarily dismissed a wind project with a higher NPV. It asserts that the Brattle Group used excessively high capacity and energy prices – two of the most important inputs in the NPV calculation – in overstating the value of Cooper Unit 1 as a stand-alone project and using it for comparing competitive projects. It further asserts

that by failing to acknowledge future environmental regulations in its sensitivity analysis, EKPC has again overvalued the Cooper Unit 1 project.⁴

Third, the Sierra Club asserts that EKPC repeatedly failed to be responsive to questions concerning the NPV of projects submitted in response to its RFP and that transparency on the part of the applicant is essential.

Gallatin Steel

Gallatin Steel recommends EKPC's proposed project be approved, noting that the Cooper Unit 1 retrofit would provide consumers with a low-cost clean-coal power resource and that it is a reasonable and cost-effective project. Gallatin Steel contends that the proposed project was the culmination of a thorough and objective RFP process and economic analysis conducted by EKPC. Moreover, Gallatin Steel avers that the PJM Reliability Pricing Model ("RPM") revenue from Cooper Unit 1 will likely exceed the proposed project's fixed costs, which would result in a negative cost to consumers. Gallatin Steel's reasoning is based on the assumption that once the choice is made to keep Cooper Unit 1 in operation, the only impact on rates associated with the proposed project would be from the fixed costs of approximately \$2 million per year, given that any increase in the variable operating costs of Cooper Unit 1 would be netted out by a corresponding decrease in the variable operating costs elsewhere on the EKPC system. Using the most recent PJM RPM capacity value of \$126/MW-day for the 2014-2015 PJM planning year and a capacity credit of 90 percent, Gallatin Steel calculates that Cooper Unit 1 would generate approximately \$4.8 million in annual capacity revenue,

⁴ For example, it points to a range of estimates EKPC developed, yet failed to disclose during discovery, concerning possible EPA regulations on Coal Combustion Residuals, Rule 316(b) of the Clean Water Act, Power Plant Effluent Limitation Guidelines, and Section 111(d) of the Clean Air Act, 42 U.S.C. § 7411.

which is well in excess of the \$2 million annual fixed costs associated with the Cooper Unit 1 retrofit project.

Gallatin Steel asserts that the Sierra Club's criticisms of EKPC are unwarranted. Gallatin Steel also asserts that the Sierra Club's effort to convert EKPC's natural gas forecast into an electric energy forecast is flawed. First, Gallatin Steel maintains that it would be illogical to accept EKPC's projected long-term natural gas prices, yet to challenge EKPC's forecasting of long-term electric energy prices. Second, Gallatin Steel contends that the EKPC natural gas forecast relied on by the Sierra Club is outdated. Lastly, Gallatin Steel argues that it is not reasonable to assume, as Sierra Club did, that future electric energy prices will continue to track natural gas prices in a similar manner as in the past.

EKPC

EKPC states that the proposed project is needed to allow it to retain 116 MW of existing capacity. Under its current configuration, Cooper Unit 1 will be unable to comply with MATS, BART, and SIP standards. EKPC asserts that the proposed project will provide Cooper Unit 1 the ability to comply with existing air regulations. In light of the minimal investment, EKPC also asserts that the proposed project will give it the flexibility to reassess whether further investment in Cooper Unit 1 is justified when any future environmental regulations are finalized and become effective. EKPC argues that the proposed project will permit Cooper Unit 1 to provide 116 MW of reliable service to its members on an economic basis and will also provide a source of margin to further benefit its members through sales into the PJM markets. Because the proposed project

preserves an existing facility, EKPC contends that it would not result in wasteful duplication of facilities.

EKPC argues that the Cooper Unit 1 duct work project offers substantial NPV relative to the other proposals received in response to the RFP. Over a ten-year period, EKPC's economic analysis indicates that its members would pay approximately \$46 million less in rates than they would if EKPC purchased an amount of capacity and energy in the PJM market equal to the total capacity and energy that will be produced by Cooper Unit 1 over the same time period. EKPC asserts, as did Gallatin Steel, that the capacity value of Cooper Unit 1 afforded by the proposed project would be more than the annual fixed costs of operating Cooper Unit 1. EKPC conservatively estimates that it could receive \$2.117 million per year in capacity payments, based upon a forecast of \$50 per MW of capacity in the PJM market. Thus, according to EKPC, the proposed project would pay for itself within 5-6 years.

EKPC contends that the proposed project has a very low risk profile, noting that it will be constructed on an existing site and tied to existing generating, environmental, and transmission facilities which are already proven and reliable. Unlike the other proposals, the Cooper Unit 1 project would have no risks such as infrastructure, location, construction, or scheduling typically associated with greenfield or distributed resource options. On the other hand, EKPC argues, the proposed project would mitigate fuel risk because the project would expand the market of coal products available for consumption at Cooper Unit 1 and mitigate any potential increase in voltage risk should Cooper Unit 2 experience a forced outage during a peak period.

EKPC avers that the proposed project would offer a physical hedge against market volatility in the PJM capacity and energy markets and that it affords its members a level of protection not available to load-serving entities which lack firm capacity positions. EKPC contends that the project is consistent with the Commission's stated policy of matching capacity to load. EKPC points out that it currently does not own sufficient generation to meet its winter peak energy demand. During its most recent winter peak, in January of 2014, with its Dale Station not operating, EKPC states that it was dependent on the PJM market for 800-900 MW to meet its load. EKPC further contends that the project will allow it to maximize the value of its existing capacity, which in turn would benefit its members through revenues received in PJM's capacity market during non-coincidental peak periods.

With respect to the Sierra Club's claim that EKPC's NPV analysis is flawed because it failed to take into account the cost of compliance with future environmental regulations relating to greenhouse gases, EKPC contends that such a regulation has yet to be drafted, much less finalized, and that the costs associated with any potential greenhouse gas regulation is speculative. EKPC asserts that its investment in the proposed project would be recovered well before any such rules would become effective and that the project would provide it with the flexibility to address any future environmental regulations once those regulations are final and the costs associated with those regulations are known.

EKPC contends that the Sierra Club's criticism that EKPC's use of an energy price forecast developed by ACES Power Marketing ("ACES") and Wood Mackenzie was somehow biased, resulting in the NPV of the Cooper Unit 1's being overvalued, is

unfounded. EKPC points out that the data provided by ACES is based upon observable market conditions, which was then blended with the longer-term forecast developed by Wood Mackenzie. EKPC asserts that it routinely relies upon market data and analysis from ACES as part of its internal operations.

EKPC takes issue with the Sierra Club's contention that EKPC's NPV analysis was flawed because EKPC's peak demand was overstated. EKPC argues that the Sierra Club selectively relied upon PJM load forecasts in contending that EKPC's peak demand forecast was overstated. Notwithstanding this reliance, EKPC points out that the Sierra Club inconsistently relied upon EKPC's "overstated" peak demand data to argue that EKPC could be more aggressive in pursuing DSM opportunities.

EKPC contends that the Sierra Club's conclusion of a DSM alternative as being a lower-cost alternative is flawed. EKPC notes that it was not aware of any RFP process for capacity anywhere in the country that had specifically requested the bidding of DSM and/or energy-efficiency ("EE") proposals and points out that the Sierra Club did not cite to any such RFP. EKPC asserts that there are no known third-party DSM/EE providers in Kentucky, which would render the aggregation of a sufficient amount of DSM/EE capacity to replace the loss of a baseload generation unit unrealistic. EKPC also contends, based upon its experience, that it would not be able to invest the capital and variable costs of the proposed project in DSM/EE and develop a resource sufficient to replace the capacity and energy generated by Cooper Unit 1. Importantly, EKPC states that it is pursuing DSM activities in conjunction with the proposed project and affirms its commitment to achieve a 50 MW reduction in summer peak demand over a five-year period.

LEGAL STANDARDS

CPCN

No utility may construct any facility to be used in providing utility service to the public until it has obtained a CPCN from this Commission.⁵ To obtain a CPCN, the utility must demonstrate a need for such facilities and an absence of wasteful duplication.⁶

“Need” requires:

[a] showing of a substantial inadequacy of existing service involving a consumer market sufficiently large to make it economically feasible for the new system or facility to be constructed and operated.

...

The inadequacy must be due either to a substantial deficiency of service facilities, beyond what could be supplied by normal improvements in the ordinary course of business; or to indifference, poor management or disregard of the rights of consumers, persisting over such a period of time as to establish an inability or unwillingness to render adequate service.⁷

“Wasteful duplication” is defined as “an excess of capacity over need” and “an excessive investment in relation to productivity or efficiency, and an unnecessary multiplicity of physical properties.”⁸ To demonstrate that a proposed facility does not result in wasteful duplication, we have held that the applicant must demonstrate that a

⁵ KRS 278.020(1).

⁶ *Kentucky Utilities Co. v. Pub. Serv. Comm’n*, 252 S.W.2d 885 (Ky. 1952).

⁷ *Id.* at 890.

⁸ *Id.*

thorough review of all alternatives has been performed.⁹ Selection of a proposal that ultimately costs more than an alternative does not necessarily result in wasteful duplication.¹⁰ All relevant factors must be balanced.¹¹

Environmental Cost Recovery Mechanism

KRS 278.183(1), commonly known as the Environmental Surcharge Statute provides, in pertinent part, as follows:

Notwithstanding any other provision of this chapter, effective January 1, 1993, a utility shall be entitled to the current recovery of its costs of complying with the Federal Clean Air Act as amended and those federal, state, or local environmental requirements which apply to coal combustion wastes and by-products from facilities utilized for production of energy from coal in accordance with the utility's compliance plan as designated in subsection (2) of this section. These costs shall include a reasonable return on construction and other capital expenditures and reasonable operating expenses for any plant, equipment, property, facility, or other action to be used to comply with applicable environmental requirements set forth in this section. Operating expenses include all costs of operating and maintaining environmental facilities, income taxes, property taxes, other applicable taxes and depreciation expenses as these expenses relate to compliance with the environmental requirements set forth in this section.

The Environmental Surcharge Statute allows a utility to recover its qualifying environmental costs through a ratemaking procedure which is an alternative to the filing of a general rate case under KRS 278.190. The Environmental Surcharge Statute

⁹ Case No. 2005-00142, *Joint Application of Louisville Gas and Electric Company and Kentucky Utilities Company for a Certificate of Public Convenience and Necessity for the Construction of Transmission Facilities in Jefferson, Bullitt, Meade, and Hardin Counties, Kentucky* (Ky. PSC Sept. 8, 2005).

¹⁰ See *Kentucky Utilities Co. v. Pub. Serv. Comm'n*, 390 S.W.2d 168, 175 (Ky. 1965). See also Case No. 2005-00089, *Application of East Kentucky Power Cooperative, Inc. for a Certificate of Public Convenience and Necessity to Construct a 138 kV Transmission Line in Rowan County, Kentucky* (Ky. PSC Aug. 19, 2005).

¹¹ Case No. 2005-00089, *East Kentucky Power Cooperative, Inc.* (Ky. PSC Aug. 19, 2005).

specifies: (1) the categories of costs that can be recovered by surcharge; (2) the procedures which must be followed by a utility to obtain approval of its environmental plan and surcharge; (3) the procedures and evidentiary standard to be applied by the Commission in reviewing applications for approval of an environmental plan and rate charge; and (4) the mandatory filing requirements and periodic reviews of an approved surcharge. The Commission must consider the plan and the proposed rate surcharge, and approve them if it finds the plan and rate surcharge to be reasonable and cost-effective.

FINDINGS

Having reviewed the record and being otherwise sufficiently advised, the Commission finds that EKPC has established that the proposed project is needed to address a capacity deficit with respect to EKPC's winter peak demand. The evidence in this matter indicates that, with its Dale Station not operating, EKPC was short approximately 800-900 MW of capacity during its most recent winter peak and that EKPC was dependent upon the market to address that capacity shortage. The ability to keep Cooper Unit 1 operational will enable EKPC, in part, to address its winter peak load and mitigate its reliance on market purchases.

The Commission also finds that the record also sufficiently demonstrates that the proposed Cooper Unit 1 retrofit project represents the least-cost alternative to meet EKPC's capacity needs. The Commission further finds that the proposed project is reasonable and will not result in wasteful duplication of utility facilities. Lastly, the Commission finds that EKPC's proposed amendment to its environmental compliance

plan is fair, just, and reasonable, and EKPC is authorized to recover the costs of the proposed project through its environmental surcharge.

The Commission notes that EKPC was prudent in its evaluation of the alternatives for the disposition of Cooper Unit 1, which is reflected in the fact that it issued an RFP to solicit bids for capacity and energy; retained an outside consultant to assist EKPC with developing and assessing the responses to the RFP; and maintained the integrity of RFP process by separating the Power Production unit, which developed the self-build options, from the internal team that analyzed the responses.

The Commission further notes that the proposed project has the highest NPV among all the alternatives that were considered. Concerning the NPV of the wind power purchase agreement proposal that the Sierra Club contends had the highest NPV, the Commission finds that the NPV analysis conducted by the Brattle Group on behalf of EKPC to be reasonable. The NPV analysis conducted to screen proposals in the wind generation group used the average monthly production and the average price over all hours of each month to calculate the proposal energy margins. EKPC used RTSim software to refine its evaluation of the NPV of the proposals. The RTSim software calculated hourly energy margins based on hourly prices and used the wind speed profile supplied by the bidder to calculate hourly production and energy margins. EKPC notes, and we agree, that wind speeds and turbine output tend to be higher in low-price hours and lower in high-price hours. Thus, energy margins by a wind facility are typically less than those from power-production sources that operate at all hours. Thus, the NPV analysis for the wind purchase power agreement proposal, reflecting the systematic hourly variation in electric energy prices and the hourly time profile of wind

speeds and wind turbine production, resulted in a NPV that was lower than the Cooper Unit 1 retrofit proposal.

With respect to the Sierra Club's contention that EKPC's NPV analysis is flawed because of the use of overstated capacity and energy prices, which, according to the Sierra Club, exerted a bias in favor of the Cooper Unit 1 retrofit proposal, the Commission finds that the energy price forecast and capacity price utilized by EKPC are reasonable. We note that the energy price forecast used by EKPC was developed by ACES and Wood Mackenzie, both of which specialize in energy market price forecasts and energy and commodity markets, respectively.

With respect to the Sierra Club's argument that EKPC failed to take into account future environmental compliance costs in its analysis, the Commission finds that such a failure in this instance is not unreasonable given the specific facts of this case. The Commission notes that the cost associated with the proposed Cooper Unit 1 retrofit is relatively inexpensive. Combined with the short pay-back period of approximately 5-6 years, we agree with EKPC's assertion that the proposed retrofit of Cooper Unit 1 would provide EKPC with operational flexibility to reassess the disposition of Cooper Unit 1 if and when additional environmental regulations are finalized and the costs associated with compliance such regulations are known. This flexibility is significant when considering that the proposed project would enable EKPC to leverage the efficiencies that will be realized by continuing to operate both Cooper Unit 1 and Unit 2; allow EKPC to maximize the value of its investment in the AQCS; would provide voltage support for the transmission grid in the area; and would avoid the need for immediate recovery of

approximately \$13.6 million of stranded costs for Cooper Unit 1 if the unit were to be retired.

While the Commission recognizes that the capital expenditure in this case (approximately \$15 million) is relatively small for an Environmental Compliance Plan, with other projects for this utility and other utilities costing in the hundreds of millions of dollars, we are nonetheless concerned with the lack of sensitivity analysis performed in this case with regard to future environmental rules and regulations, including, but not limited to, the cost of complying with Section 111(d) of the Clean Air Act. While the costs of running additional analyses may have exceeded the benefit of more accurate information in this case, it is troubling that EKPC, through a company witness, indicated that it does not model anticipated future environmental rules and regulations. Modeling future uncertainty is difficult, but doing so can shed important light on decisions such as these. Accordingly, notwithstanding our finding that EKPC was reasonable in not considering potential environmental compliance costs in its analysis given the specific facts of this case, in the future we expect that these types of sensitivity analyses will be conducted as part of a utility's prudent evaluation of alternatives to any environmental compliance plan.

With respect to the Sierra Club's contention that a DSM/EE alternative is a lower-cost option to address the disposition of Cooper Unit 1, the Commission finds the approach taken by EKPC of pursuing DSM/EE in tandem with the proposed retrofit to be reasonable. In order to achieve the energy and peak demand savings projected by the Sierra Club sufficient to replace all of Cooper Unit 1's energy and capacity with DSM by 2021, EKPC would have to average approximately 0.3 percent to 0.5 percent

incremental savings per year. This would require EKPC to effectively increase its planned 0.15 percent per year energy savings by two to three times. As was noted in the Staff Report in Case No. 2012-00149 involving EKPC's 2012 IRP, EKPC is currently pursuing DSM in an aggressive manner. Thus, while the Sierra Club's projections of DSM/EE savings may theoretically be possible to achieve, it would be highly unlikely that EKPC could achieve saving levels above and beyond its already aggressively planned annual energy savings in the short-term in the absence of any mandated DSM/EE savings, funding mechanisms, and/or financial incentives for DSM/EE deployment. This is especially so given the economic conditions in EKPC's service territory, as well as the territory's relatively low price of electricity. Both have been a deterrent to the level of customer participation, which has negatively impacted EKPC's DSM program performance. In the long-term, we would expect EKPC to continue its efforts to develop, evaluate, and implement cost-effective DSM/EE programs which would increase the robustness of its DSM portfolio, including the potential of bidding in EE savings into the PJM energy market.

Although EKPC chose not to review DSM projects as a part of its RFP, the Commission would reiterate its support of the work of the Demand-Side Management and Renewable Energy Collaborative. The 2013 Annual Report shows progress and the Commission looks forward to seeing implementation plans and results in future reports.

With respect to the Sierra Club's claim that EKPC has failed to provide information requested in this proceeding, the Commission finds that EKPC, by its own admission at the hearing in this matter, should have been more responsive to the Sierra

Club's requests. We note, however, that EKPC ultimately responded to all discovery requests, even though some of those responses were at the direction of the Commission pursuant to a motion to compel by the Sierra Club. The Commission expects all parties in every proceeding to be fully responsive to requests for information and to do so in a timely manner – particularly where, such as here, a statutory due date is implicated and a procedural schedule has been established. To the extent that issues of relevancy exist, the Commission will make that determination when raised.

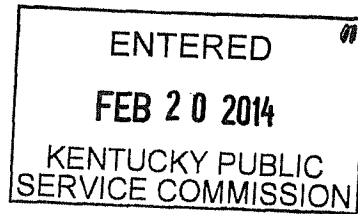
IT IS THEREFORE ORDERED that:

1. EKPC is granted a CPCN to construct the Cooper Unit 1 retrofit.
2. EKPC is authorized to amend its Environmental Compliance Plan, pursuant to KRS 278.183.
3. EKPC is allowed to recover the costs associated with its amended Environmental Compliance Plan through its existing environmental surcharge mechanism.
4. The proposed revisions and additions to EKPC's monthly environmental surcharge forms as set forth in the application are approved.
5. EKPC's proposal to use a Times Interest Earned Ratio component of 1.50 to calculate the rate of return on the project is approved, subject to change by a future order of the Commission.
6. EKPC shall promptly file with the Commission a notice and supporting analysis in the event that a new or revised environmental requirement or regulation impacts any facility in service or under construction.

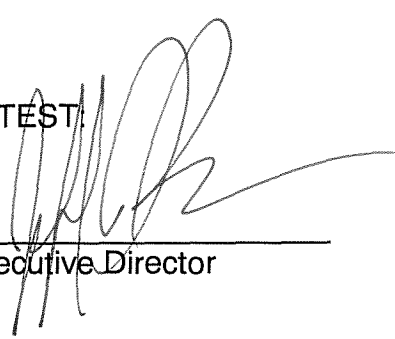
7. Any documents filed in the future pursuant to paragraph 6 herein shall reference this case number and shall be retained in the utility's general correspondence files.

8. The Executive Director is delegated authority to grant reasonable extensions of time for the filing of any documents required by this Order upon a showing of good cause for such extension.

By the Commission



ATTEST:



Executive Director

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