COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

BACK-UP POWER SUPPLY PLAN OF DUKE ENERGY KENTUCKY, INC.	))	CASE NO. 2017-00117

ORDER

On March 3, 2017, Duke Energy Kentucky, Inc. ("Duke Kentucky") filed an application seeking Commission approval of a back-up power supply plan. Pursuant to the Commission's Order in Case No. 2015-00075,[1] Duke Kentucky's current back-up supply plan ("2015 Plan") is authorized to be in effect through May 31, 2017. In conformity with the directives of the final Order in Case No. 2015-00075, Duke Kentucky provided notice on November 30, 2016, of its intent to file a new back-up power supply plan, and it has filed the instant application for approval of a new plan 90 days prior to the effective date of the proposed plan. In the instant application, Duke Kentucky is proposing a new back-up supply plan ("2017 Plan") to extend through the next three PJM Interconnection LLC ("PJM") delivery years beginning June 1, 2017, through May 31, 2018; June 1, 2018, through May 31, 2019; and June 1, 2019, through May 31, 2020. On May 24, 2017, Duke Kentucky filed notice that the matter could be decided upon the evidentiary record without the need for a hearing. The matter now stands submitted to the Commission for a decision.

Duke Kentucky states that it currently participates in PJM under the Fixed Resource Requirement ("FRR") option for purposes of meeting PJM's Resource

[1] Case No. 2015-00075, *Back-Up Power Supply Plan of Duke Energy Kentucky, Inc.* (Ky. PSC June 15, 2015).

Adequacy requirement. As an FRR entity, Duke Kentucky does not participate in the PJM capacity market auctions but is required to submit a FRR capacity plan to satisfy the unforced capacity obligation for all loads in Duke Kentucky's FRR Service Area, including all expected load growth in the FRR Service Area. Duke Kentucky notes that its initial five-year FRR commitment expired in June 2016, and that it now has the ability to exit the FRR option and, if it so chooses, participate in a future PJM base residual auction for capacity procurement in a future delivery year. Duke Kentucky states that it regularly evaluates the merits of exiting the FRR option, but has determined that, at this time, the transition to the base residual auction option is not in the best interests of its customers. Duke Kentucky notes that the key drivers in evaluating the two options relate to Duke Kentucky's net generation position, which reflects the difference between generation available to serve as PJM capacity and the expected customer load obligation.

Although Duke Kentucky's FRR Plan has been accepted by PJM for the next three delivery years, Duke Kentucky states that PJM can still assess penalties to Duke Kentucky under the new Capacity Performance ("CP") construct if Duke Kentucky's resources are not available in any hour during compliance hours, which are set by PJM during periods of capacity or operational stress on the PJM system. Duke Kentucky notes that its Woodsdale Generating Station would be more at risk than the East Bend Generating Station, given the fuel-delivery risk inherent in the natural gas units at the Woodsdale facility. According to Duke Kentucky, the penalty for the Woodsdale Generating Station could be as much as $1.6 million per hour if the station were not available during a CP compliance event.

Duke Kentucky stated that it used standard forecasting methods to calculate its back-up power supply needs. Duke Kentucky considered supply options available from the PJM energy markets and its request for proposals ("RFP") issued on September 2, 2016. Duke Kentucky noted that its primary goal in selecting an appropriate back-up power supply plan was to balance cost and risk mitigation. According to Duke Kentucky, the 2017 Plan is similar to the 2015 Plan and consists of fixed-priced financial swap contracts to lock in the price of power during scheduled outages and PJM energy market purchases during forced outages. With the June 1, 2015, retirement of Miami Fort Unit 6 and Duke Kentucky's recent acquisition of the remaining 31 percent interest in East Bend Unit 2, Duke Kentucky's generating portfolio will consist of a 600-megawatt ("MW") coal-fired base-load unit located at the East Bend Generating Station and six natural gas-fired peaking units with a combined capacity of 492 MWs located at the Woodsdale Generating Station. Recognizing the concentration in its generating portfolio, Duke Kentucky stated that it is considering enhancing its 2017 Plan with a business interruption insurance product specifically tailored to mitigate exposure to market prices from an extended forced outage at East Bend Unit 2. Duke Kentucky also states that it needed to consider back-up power supply options for East Bend because East Bend is a relatively low-cost base-load unit, and Duke Kentucky relies upon it as a primary hedge against customer load demand energy purchases. Duke Kentucky states that back-up power supply options are not needed for the Woodsdale Station because those units have lower capacity factors, and a back-up supply option would not be cost-effective for the Woodsdale Station.

Duke Kentucky received 42 bid alternatives from three different bidders in response to the RFP it issued on September 2, 2016. The RFP sought bids for the following types of supply options: (1) back stand energy call options; (2) daily call options; and (3) insurance products. Back stand energy call options and insurance products are tied to unplanned outages at East Bend Unit 2. Daily call options are independent of any outages at East Bend Unit 2 and are directly compared to the market. Duke Kentucky's analysis indicated that none of the four back stand bid option proposals or the 11 daily call option proposals compared favorably to the market case. Duke Kentucky's analysis found, however, that an insurance product could provide an effective hedge, particularly during major summer and winter outage scenarios. Duke Kentucky concludes that a well-designed insurance product could complement the historical strategy that it has employed, but would require further negotiation on specific terms and conditions.

As in the past, Duke Kentucky also considered additional back-up power supply alternatives not contained in the response to the RFP. Duke Kentucky considered Alternative A, which consisted of energy purchases through the PJM energy markets for back-up power needs for all outages, including planned and forced outages. Duke Kentucky also considered Alternative B, which consisted of fixed-priced financial swap contracts through the Intercontinental Exchange or the over-the-counter broker market to lock in the price of power during scheduled outages and PJM energy market purchases for forced outages.

Duke Kentucky indicated that Alternative A has the potential to expose it to possible price spikes during scheduled outage periods. For forced-outage situations,

Duke Kentucky determined that it would not be feasible to make fixed forward price purchases during such an outage because it would not be known in advance when such an outage would occur.

Duke Kentucky stated that Alternative B provided flexibility to optimize the actual outage schedule under conditions when power markets unit availability are changing. Given the liquid nature of the Intercontinental Exchange or the over-the-counter broker market, Duke Kentucky notes that it can enter into forward contracts a few months in advance of the scheduled outages without paying a premium to lock in the prices for a three-year time period. Duke Kentucky states that if prices appear to be increasing, the plan provides the flexibility to make the forward contract purchases for long-term periods. Conversely, Duke Kentucky notes, it could postpone these purchases if prices are flat or falling. Duke Kentucky further states that this alternative provides flexibility to modify forward contract positions if scheduled outages dates are modified by using the Intercontinental Exchange market to unwind existing contracts and purchase new contracts to match new scheduled outage dates.

Having reviewed the record and being otherwise sufficiently advised, the Commission finds that Duke Kentucky's Alternative B back-up supply plan achieves its goal to strike a balance between risk and cost. We note that Alternative A relies solely on the PJM energy markets for all outage scenarios and, therefore, exposes Duke Kentucky to possible market volatility. Alternative B provides a hedge against the risk of price spikes during scheduled outages because the price for back-up power would be fixed. We further note that the responses to call bids, based upon Duke Kentucky's analysis, did not provide economic benefits as compared to expected market priced

energy. As we noted in Case No. 2015-00075, business interruption insurance may provide an additional cost-effective hedge against market-price exposure, but only if satisfactory terms can be negotiated and the insurance product provides value. As in Case No. 2015-00075, the Commission will allow business-interruption insurance to be included in the Alternative B Plan, subject to the requirement that within ten days of executing such a contract, Duke Kentucky files with the Commission the contract's terms, provisions, and conditions, along with an analysis of the expected value of that insurance product.

IT IS THEREFORE ORDERED that:

1. Duke Kentucky's back-up power supply plan, as described in its application and in the findings above as Alternative B Plan, is approved through the PJM 2017/2018, 2018/2019, and 2019/2020 Delivery Years ending on May 31, 2018, May 31, 2019, and May 31, 2020.

2. Within ten days of executing an agreement to secure any insurance product that becomes a part of the Alternative B Plan, Duke Kentucky shall file with the Commission the terms, provisions, and conditions thereof, along with an analysis of the expected value.

3. Six months prior to the expiration of the Alternative B Plan approved herein, Duke Kentucky shall inform the Commission of its intentions concerning its prospective back-up power supply plan

4. Duke Kentucky shall submit any future back-up supply plans for review and approval no later than 90 days prior to the intended effective date of the new plan.

By the Commission

ENTERED
MAY 31 2017
KENTUCKY PUBLIC
SERVICE COMMISSION

ATTEST

Executive Director

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