Arkansas Electric Cooperative Corporation

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F.O. Box 194208
Little Rock, Arkansas 72219-4208
(501) 570-2200

26 August 2014

Secretary of the Commission
Arkansas Public Service Commission
1000 Center Street
Little Rock, AR 72201-4314

RE: Proposed Updated QF-1 Tariff and Required Data Under the APSC’s Cogeneration Rules, Section 3.2(b) - to be filed in Docket No. 81-071-F

Dear Madam Secretary:

Please find attached a copy of Arkansas Electric Cooperative Corporation’s (“AECC”) proposed QF-1 Tariff accompanied by the Supplemental Testimony of Robert T. Shields in support of the updated QF-1 Tariff for cogenerators and small power producers with a generating capacity of 100 kW or less. Please file this letter, the Supplemental Testimony, and the proposed QF-1 Tariff in Docket No. 81-071-F.

Updated data required by Section 3.2 (b) of the Arkansas Public Service Commission’s Cogeneration Rules are as follows:

(1) AECC’s QF-1 Rate applies only to cogenerators and small power producers of 100 kW or less. AECC will negotiate directly with larger cogenerators in order to achieve an avoided cost rate that more accurately reflects the cogenerator’s or small power producer’s impact on AECC’s avoided costs. Solely with respect to the energy component, an avoided energy cost of approximately $0.040 to $0.055 per kWh is a reasonable forecast of what a qualifying facility might expect to receive in payment from AECC over the next five years.

(2) AECC projects that it will not need additional generating capacity until approximately 2023. AECC anticipates that a future capacity need might be met in any one of three ways: (1) a purchase power agreement; (2) the purchase of an existing generating plant; or (3) the construction of a new generating plant. Regardless of the source of future capacity, AECC’s criteria for acquiring that capacity will be to evaluate our members’ needs based on long term economics and reliability.

(3) AECC estimates that the capacity cost of possible new construction in 2023 might be approximately $1,150 per kW (in 2023 dollars) with an estimated associated fuel cost of $0.05 per kWh.

If you have any questions regarding this filing, I may be contacted at 501-570-2408.

Sincerely,

Robert Shields
Senior Rate Analyst

cc: Duane Highley
    Forest Kessinger
    Robert M. Lyford
    Victoria Lamb
    Ricky Bittle
    Steve Metcalf
    Andrew Lachowsky
    Steve Williams

The Electric Cooperatives of Arkansas
We’re here for you.
This Schedule Consists of 4 Sheet(s)

<table>
<thead>
<tr>
<th>Kind of Service:</th>
<th>Electric</th>
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<tbody>
<tr>
<td>Class of Service:</td>
<td>Member Cooperatives of Arkansas Electric Cooperative Corporation</td>
</tr>
<tr>
<td>Original Schedule:</td>
<td>QF-1</td>
</tr>
<tr>
<td>Replacement Schedule:</td>
<td>QF-1</td>
</tr>
<tr>
<td>Date Previously Approved:</td>
<td>9 Sept 2012</td>
</tr>
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</table>

**AVAILABILITY**

At any point on one of AECC’s member cooperative’s existing facilities having adequate capacity and suitable voltage for receipt of electric power from the Qualifying Facility.

**APPLICATION**

To any retail consumer (“consumer”) that has installed electric cogeneration or small power production facilities of 100 kW capacity or less which is a Qualifying Facility pursuant to the Arkansas Public Service Commission – Cogeneration Rules – Section 2. Such Qualifying Facilities must be for the consumer’s sole use at a single location.

Not applicable to short-term or seasonal service.

The consumer shall also enter into a Power Purchase Agreement with the applicable member cooperative.

**ENERGY PAYMENT**

Based on a monthly calculation, AECC will compensate the Qualifying Facility, at the point of interconnection, for energy generated and delivered into AECC’s system, at AECC’s monthly avoided energy and transmission cost as calculated by AECC below. As an input to the Energy Payment calculation, AECC shall update and file an avoided cost Qualifying Facility tariff with the Arkansas Public Service Commission not less than every 24 months. Such costs may be adjusted by contract for individual Qualifying Facilities based on the factors specified in Arkansas Public Service Commission – Cogeneration Rules – Section 3.4(e). (CT)
ARKANSAS ELECTRIC COOPERATIVE CORPORATION
("AECC")

Arkansas Public Service Commission

Continuation Schedule OF-I
Sheet 2 of 4

CAPACITY PAYMENT

The maximum dependable output of a Qualifying Facility will receive a capacity payment based on the $/kW value of whatever capacity addition has been avoided on the AECC system. Capacity payments will not be provided until a capacity addition is actually avoided on the AECC system. Such avoided capacity costs can be adjusted for individual Qualifying Facilities based on the factors specified in the Arkansas Public Service Commission – Cogeneration Rules – Section 3.4(e).

OTHER PROVISIONS

1. The Qualifying Facility shall pay AECC the initial and continuing cost of any additional facilities including special metering equipment made necessary by interconnected operations with the Qualifying Facility. Continuing costs are considered to be the operation and maintenance, taxes, insurance, and replacement costs associated with any additional facilities. The Qualifying Facility shall pay AECC a monthly interconnection service charge to cover all continuing costs. This monthly interconnection service charge shall be determined individually for each Qualifying Facility. (CT)

2. Unless the Qualifying Facility can adequately demonstrate to AECC that provisions have been made for the complete shutdown of its electric power production equipment and disconnection and/or isolation from other sources of power supply during periods in which the Qualifying Facility is interconnected with AECC’s or its member cooperative’s system, the Qualifying Facility will install and maintain at its own expense:

   A. Protective devices necessary for the protection of its personnel and equipment.

   B. Protective devices necessary, in AECC’s judgment, for the protection of AECC’s and the member cooperative’s personnel, equipment and service.
3. The Qualifying Facility shall hold both AECC and the member cooperative harmless from any loss due to damages or loss to the Qualifying Facility’s equipment, personnel, or property arising from or in connection with interconnected operations with AECC’s or the member’s system. The Qualifying Facility shall indemnify and keep indemnified both AECC and the member cooperative from and against all loss, damage, and expense which either may sustain by reason of or in connection with interconnected operations.

**PAYMENT**

The monthly payment or charge to the Qualifying Facility by AECC under this rate will be handled separately from billing by the member cooperative for any Qualifying Facility requirements under member cooperative rate schedules. If payment to the Qualifying Facility for capacity and or energy deliveries to AECC during the month does not exceed the charges specified herein, the Qualifying Facility shall have fifteen (15) calendar days after the bill is mailed in which to make payment.

**AVOIDED CAPACITY COSTS**

Capacity - $0.00 per kW for capacity under a long-term contract subject to the approval of the Arkansas Public Service Commission
MONTHLY AVOIDED ENERGY COSTS

The following calculations shall be based on charges for AECC’s load in the Southwest Power Pool’s and the Midcontinent Independent System Operator’s energy and energy operating reserve markets ("markets"). (CT)

By the first working day following the eighth day of each month, AECC shall sum the day-ahead and real-time total cumulative cost of energy and energy related charges (which are eligible for recovery under AECC’s Fuel and Purchased Energy Adjustment Rider) for energy purchased from the markets for the preceding month. The amount so summed shall be reduced by any revenue or credit received by AECC for the sale of excess day-ahead or real-time energy back into the markets for that period. The net amount so summed shall be divided by the corresponding summed monthly kWh purchased from the markets to serve AECC’s loads. The average monthly kWh amount so calculated shall be paid by AECC to a Qualifying Facility for all kWh input by the Qualifying Facility at the point of interconnection into AECC’s or a member cooperative’s system for the month so calculated. (CT)

All payments to a Qualifying Facility so calculated shall be final and not subject to market resettlements. (CT)

AVOIDED TRANSMISSION COSTS (CT)

To the amount so calculated, AECC shall also add $.0055 per kWh as compensation for AECC’s avoided Transmission Costs. (CT)

Payments for avoided Transmission Costs are only available to a Qualifying Facility having a capacity of 100 kW or less. (CT)
BEFORE THE

ARKANSAS PUBLIC SERVICE COMMISSION

IN THE MATTER OF THE DETERMINATION )
OF THE RULES REGULATING THE RATES )
AND SERVICE OF COGENERATORS AND ) DOCKET NO. 81-071-F
SMALL POWER PRODUCERS )

SUPPLEMENTAL TESTIMONY

OF

ROBERT T. SHIELDS

ON BEHALF OF

ARKANSAS ELECTRIC COOPERATIVE CORPORATION

August 26, 2014
Q. Please state your name and business address.

A. My name is Robert T. Shields. I am employed by Arkansas Electric Cooperative Corporation ("AECC") as its Senior Rate Analyst. My business address is P.O. Box 194208, 1 Cooperative Way, Little Rock, AR 72219.

Q. Have you presented testimony before the Arkansas Public Service Commission ("Commission") on previous occasions?

A. I have appeared before this Commission on many occasions and I have previously testified in this Docket (No. 81-071-F).

Q. What is the purpose of your current testimony in this Docket?

A. I wish to update the avoided cost information used in AECC's avoided cost tariff for Qualifying Facilities of 100 kW or less ("QF-1").

Q. For purposes of this filing, how is AECC's avoided cost calculation made?

A. Under the Commission's Cogeneration Rules, AECC is obligated to pay a Qualifying Facility of 100 kW or less avoided cost as described in the Commission's Cogeneration Rules.

Q. Is this proposed QF-1 using the same methodology as in the past?

A. No. In the past, AECC's QF-1 rate was calculated on AECC's fuel adjustment rider base plus AECC's monthly fuel adder in addition to items such as avoided variable generation operation and maintenance expenses and avoided transmission costs.

Q. Why has AECC changed the methodology for calculating the QF-1 rate?

A. Since AECC's last QF-1 rate was approved by the Commission, AECC has entered into two energy markets those being the Southwest Power Pool, Inc. and
the Midcontinent Independent System Operator, Inc. In AECC’s proposed QF-1 rate, the avoided cost is primarily based on energy purchases in these two markets.

Q. How does AECC now propose to calculate its avoided cost in QF-1?
A. It is the avoided average energy cost based on Locational Marginal Price (LMP) that AECC incurs in both markets for its load in each month. AECC would add to this amount its avoided transmission cost. The calculation for AECC’s avoided transmission cost is shown in Appendix 1 and this methodology has not changed from how it was done in the past.

Q. Why has AECC not included AECC’s variable generation operation and maintenance expenses in its proposed QF-1?
A. AECC’s variable generation operation and maintenance expenses are no longer avoided costs when the QF-1 rate is based on energy market purchases.

Q. Would AECC be willing to offer this same QF-1 rate to a Qualifying Facility larger than 100 kW?
A. No, AECC would not. AECC would negotiate individually with a larger Qualifying Facility in excess of 100 kW.

Q. Is QF-1 currently in use for any Qualifying Facility?
A. Yes. AECC has one Qualifying Facility, the City of Fort Smith, which is taking service under QF-1.

Q. Appendix 1 is attached to your testimony. What do the numbers provided in this Appendix represent?
A. Appendix 1 represents the data necessary to derive AECC’s avoided cost for transmission for Qualifying Facilities of 100 kW or less.

Q. Does this conclude your testimony?

A. Yes.
APPENDIX 1

AECC

DOCKET NO. 81-071-F
Calculation of Avoided Transmission Expenses & Losses

Avoided Transmission Expenses:

Annual Energy in 1 kW @ 100% Load Factor
65% Load Factor

Monthly Trans. Cost of 1 kW @ Trans. Voltage
Added Cost of 1 kW at Distribution Voltage

Total Monthly cost of Trans. Taken at Distribution Voltage

Months in a Year

Total Annual Transmission Cost per kW

Divided by Annual Energy (in mill per kWh)
### Appendix 1

#### Page 2 of 3

**Rate Formula Template**

*Entergy Arkansas, Inc. (EAI)*

#### Formula Rate - Non-Leveraged

**Rate Formula Template**

*Utilizing FERC Form 1 Data*

**Entergy Arkansas, Inc. (EAI)**

<table>
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<th>Line No.</th>
<th>Description</th>
<th>Total</th>
<th>Allocator</th>
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<tbody>
<tr>
<td>1</td>
<td>Gross Revenue Requirement (Page 3, Line 31)</td>
<td>$145,708,012</td>
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<tr>
<td>2</td>
<td>Revenue Credits (Note T)</td>
<td>22,525</td>
<td>0.98124</td>
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<td>3</td>
<td>Account No. 454 (Page 4, Line 34)</td>
<td>4,337,594</td>
<td>0.98124</td>
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<td>4</td>
<td>Account No. 456 (Page 4, Line 37)</td>
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<td>0.98124</td>
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<td>5</td>
<td>Revenues from Grandfathered Interzonal Transactions</td>
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<td>0.98124</td>
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<td>6</td>
<td>TOTAL REVENUE CREDITS (Sum Lines 2-5)</td>
<td>$4,180,192</td>
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<td>7a</td>
<td>NET REVENUE REQUIREMENT (Line 1 minus Line 6)</td>
<td>$141,527,820</td>
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<tr>
<td>7b</td>
<td>Network Customer 1</td>
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<td></td>
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<tr>
<td>7c</td>
<td>Network Customer 2</td>
<td>0</td>
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<tr>
<td>7d</td>
<td>Adjusted Revenue Requirement (Sum Lines 7a-7c) (Note T)</td>
<td>$141,527,820</td>
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#### DIVISOR

8 Average of 12 coincident system peaks for requirements (RQ) service (Note A) | 6,611,308
9 Plus 12 CP of firm bundled sales over one year not in Line 8 (Note B) | 0
10 Plus 12 CP of Network Load not in Line 8 (Note C) | 0
11 Less 12 CP of firm P-T-P over one year (enter negative) (Note D) | 0
12 Plus Contract Demand of firm P-T-P over one year | 0
13 Less Contract Demand from Grandfathered Interzonal Transactions over one year (enter negative) (Note S) | 0
14 Less Contract Demands from service over one year provided by ISO at a discount (enter negative) | 0
15 Divisor (Sum Lines 8-14) | 6,611,308

16 Annual Cost ($ / kW / Yr) (Line 7 / Line 15) | 21.407
17 Network & P-to-P Rate ($ / kV/Mo) (Line 16 / 12) | 1.784

#### Peak Rate

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<tr>
<th>Description</th>
<th>Rate</th>
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<tbody>
<tr>
<td>Point-To-Point Rate ($ / kW / Wk) (Line 16 / 52; Line 16 / 52)</td>
<td>0.412</td>
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<tr>
<td>Point-To-Point Rate ($ / kV / Day) (Line 16 / 260; Line 16 / 365)</td>
<td>0.082 Capped at weekly rate</td>
</tr>
<tr>
<td>Point-To-Point Rate ($ / MWh) (Line 16 / 14,160; Line 16 / 8,760 * 1,000)</td>
<td>5.146 Capped at weekly and daily rates</td>
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#### FERC Annual Charge ($ / MWh) (Note E)

<table>
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<tr>
<th>Description</th>
<th>Rate</th>
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<tbody>
<tr>
<td>Short Term</td>
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<tr>
<td>Long Term</td>
<td>$0.000</td>
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## Distribution Service Billing Demand

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<tr>
<th>Demand (KW)</th>
<th>Rate ($/kw)</th>
<th>Amount ($)</th>
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<tbody>
<tr>
<td>72,812</td>
<td>0.81</td>
<td>58,977.72</td>
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### Prior Month Adjustment(s):
- Distribution Service Billing Demand: $0.00

### Total for Month
- $58,977.72

### Net Amount Due EAI
- $58,977.72

Please remit payment to:
Entergy Arkansas, Inc.
P.O. Box 8107
Baton Rouge, Louisiana 70891-8107
PSC Customer No. 25392