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BEFORE THE ARIZONA CORPORATION COMMISSION

COMMISSIONERS

SUSAN BITTER SMITH - CHAIRMAN  
BOB STUMP  
BOB BURNS  
DOUG LITTLE  
TOM FORESE

RECEIVED

2015 DEC 21 P 3: 37

AZ CORP COMMISSION  
DOCKET CONTROL

IN THE MATTER OF THE APPLICATION OF  
GARKANE ENERGY COOPERATIVE, INC. FOR  
A DETERMINATION OF THE FAIR VALUE OF  
ITS PROPERTY FOR RATEMAKING PURPOSES,  
TO FIX A JUST AND REASONABLE RETURN  
THEREON, AND TO APPROVE RATES  
DESIGNED TO DEVELOP SUCH RETURN AND  
REQUEST FOR WAIVER.

DOCKET NO. E-01891A-15-0176

**STAFF'S NOTICE OF FILING  
DIRECT TESTIMONY**

The Utilities Division ("Staff") of the Arizona Corporation Commission ("Commission") hereby files the Direct Testimony of Staff witnesses Phan Tsan, Margaret Little, Darron Carlson and Eric Hill in the above-captioned matter.

RESPECTFULLY SUBMITTED this 21<sup>st</sup> day of December, 2015.

Robin R. Mitchell  
Matthew Laudone  
Attorneys, Legal Division  
Arizona Corporation Commission  
1200 West Washington Street  
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Original and thirteen (13) copies of the foregoing filed this 21<sup>st</sup> day of December, 2015, with:

Docket Control  
Arizona Corporation Commission  
1200 West Washington Street  
Phoenix, Arizona 85007

Arizona Corporation Commission

DOCKETED

DEC 21 2015

DOCKETED BY

1 Copy of the foregoing mailed this  
21<sup>st</sup> day of December, 2015, to:

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BEFORE THE ARIZONA CORPORATION COMMISSION

SUSAN BITTER SMITH  
Chairman  
BOB STUMP  
Commissioner  
BOB BURNS  
Commissioner  
DOUG LITTLE  
Commissioner  
TOM FORESE  
Commissioner

IN THE MATTER OF THE APPLICATION OF ) DOCKET NO. E-01891A-15-0176  
GARKANE ENERGY COOPERATIVE, INC., )  
FOR A DETERMINATION OF THE FAIR )  
VALUE OF ITS PROPERTY FOR RATE MAKING )  
PURPOSES, TO FIX A JUST AND REASONABLE )  
RETURN THEREON, AND TO APPROVE RATES )  
DESIGNED TO DEVELOP SUCH RETURN AND )  
REQUEST FOR WAIVER. )  
\_\_\_\_\_ )

DIRECT  
TESTIMONY  
OF  
PHAN TSAN  
PUBLIC UTILITIES ANALYST  
UTILITIES DIVISION  
ARIZONA CORPORATION COMMISSION

DECEMBER 21, 2015

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**EXECUTIVE SUMMARY**  
**GARKANE ENERGY COOPERATIVE, INC.**  
**DOCKET NO. E-01891A-15-0176**

Garkane Energy Cooperative, Inc. ("Garkane" or "Cooperative") is a non-profit rural electric cooperative located in Loa, Utah. The Cooperative provides electric service to a total of 12,844 consumers, 11,405 in Utah and 1,439 in Arizona.

On June 1, 2015, Garkane filed an application for a permanent rate increase. Garkane's proposed rate base is \$9,651,807 in Arizona. This represents both Cooperative's original cost rate base and its fair value rate base. Staff recommends adoption of the Cooperative proposed rate base.

Garkane proposed a \$152,128, or 3.33 percent, revenue decrease from \$4,561,895 to \$4,409,767 in Arizona. The proposed revenue would produce an operating margin<sup>1</sup> before interest on long-term debt of \$678,134 for a 7.03 percent rate of return on rate base.

Staff recommended a \$175,576, or 3.85 percent, revenue decrease from \$4,561,895 to \$4,386,319 in Arizona. Staff recommended revenue would produce an operating margin before interest on long-term debt of \$1,072,806 for an 11.12 percent rate of return.

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<sup>1</sup> The term "Operating margin" when used in context with Arizona electric distribution cooperatives has the same connotation as operating income.

1     **INTRODUCTION**

2     **Q.     Please state your name, occupation, and business address.**

3     A.     My name is Phan Tsan. I am a Public Utilities Analyst employed by the Arizona Corporation  
4           Commission (“ACC” or “Commission”) in the Utilities Division (“Staff”). My business  
5           address is 1200 West Washington Street, Phoenix, Arizona 85007.

6

7     **Q.     Briefly describe your responsibilities as a Public Utilities Analyst.**

8     A.     I am responsible for the examination and verification of financial and statistical information  
9           included in utility rate applications. In addition, I prepare written reports, testimonies, and  
10          schedules that include Staff recommendations to the Commission. I am also responsible for  
11          testifying at formal hearings on these matters.

12

13    **Q.     Please describe your educational background and professional experience.**

14    A.     I received a Bachelor of Science Degree in Finance and Economics and a Master of Science  
15          Degree in Accounting from the Grand Canyon University.

16

17          Since joining the Commission, I have participated in numerous rate cases and other  
18          regulatory proceedings. I have testified on matters involving regulatory accounting and  
19          auditing. Additionally, I have attended rate school sponsored by the National Association of  
20          Regulatory Utility Commissioners (“NARUC”) on ratemaking.

21

22    **Q.     What is the scope of your testimony in this case?**

23    A.     I am presenting Staff’s analysis and recommendations in the areas of rate base, operating  
24          revenues and expenses, regarding Garkane Energy Cooperative’s (“Garkane” or  
25          “Cooperative”) application for a permanent rate increase.

26

1 **Q. Who else is providing Staff testimony and what issues will they address?**

2 A. Staff witness Darron Carlson is presenting Staff's recommended revenue requirement. Staff  
3 Witness Eric Hill is presenting Staff's base cost of purchased power recommendation. Mr.  
4 Hill is also presenting Staff's recommendation concerning the Cooperative's adjustor  
5 mechanism in this round of testimony. Staff witness Margaret Little is presenting Staff's  
6 engineering analysis and recommendations in this round of testimony.

7  
8 **Q. What is the basis of your recommendations?**

9 A. I performed a regulatory audit of Garkane's application to determine whether sufficient,  
10 relevant, and reliable evidence exists to support the Cooperative's requested rate increase.  
11 The regulatory audit consisted of examining and testing the Cooperative's financial  
12 information, accounting records, and other supporting documentation.

13  
14 **BACKGROUND**

15 **Q. Please review the background of this Applicant.**

16 A. Garkane is a non-profit rural electric cooperative located in Loa, Utah. The Cooperative  
17 provides electric service to a total of 12,844 consumers, 11,405 in Utah and 1,439 in Arizona.  
18 Garkane's Arizona current rates were authorized in Decision No. 61105, dated August 28,  
19 1998. Current rates for Cooperative's Colorado City service area were authorized in Decision  
20 No. 70979, dated May 5, 2009.

21  
22 **Q. What is the primary reason for the Cooperative's filing?**

23 A. According to the Cooperative, Garkane's Board of Directors approved new rates for its Utah  
24 member/customers that were effective May 1, 2015, and has filed this application to seek the  
25 Commission's approval of proposed rates for Arizona that are structured similar to the rates  
26 approved for Utah.

1 **SUMMARY OF THE RATE BASE AND OPERATING MARGIN - ARIZONA**

2 **Q. What test year did Garkane use in this filing?**

3 A. Garkane's rate filing is based on the twelve months ended December 31, 2013 ("test year").  
4

5 **Q. Please summarize the rate base and operating margin adjustments addressed in your**  
6 **testimony for Garkane.**

7 A. Staff made no adjustments to rate base. Staff's adjustments to operating margin address the  
8 following issues:  
9

10 Wholesale Power Cost Adjustment ("WPCA") Revenue – This adjustment eliminates the  
11 WPCA revenue from operating revenue, and increases Base Revenue by \$274,946. The net  
12 result of this adjustment to Total Operating Revenues is zero.  
13

14 Purchased Power Expense – This adjustment decreases Purchased Power cost by \$354,040.  
15

16 Transmission Operating & Maintenance Expense ("Transmission O & M") – This  
17 adjustment reclassifies \$11,781 non-related Purchased Power cost from Purchased Power  
18 Expense to Transmission Operating and Maintenance Expense.  
19

20 Administrative and General Expense – This adjustment removes \$75,860 from the  
21 Administrative and General Expense account.  
22

1     **RATE BASE**

2     *Fair Value Rate Base*

3     **Q.     Did the Cooperative prepare a schedule showing the elements of Reconstruction Cost**  
4            **New Depreciated Rate Base (“RCND”)?**

5     A.     No, the Cooperative did not. The Cooperative requested that its Original Cost Rate Base  
6            (“OCRB”) be treated as its Fair Value Rate Base (“FVRB”).

7  
8     *Rate Base – Arizona Jurisdiction*

9     **Q.     Please summarize Staff’s adjustments to the Cooperative’s rate base.**

10    A.     Staff made no adjustments to rate base.

11  
12    **Q.     What is Staff’s recommendation?**

13    A.     Staff recommends adoption of the Cooperative proposed rate base of \$9,651,807 in Arizona  
14            as shown on Schedule PNT-2.

15  
16    **OPERATING MARGIN – ARIZONA JURISDICTION**

17    *Operating Margin Summary*

18    **Q.     What are the results of Staff’s analysis of test year revenues, expenses and operating**  
19            **margin?**

20    A.     As shown on Schedules PNT-4 and PNT-5, Staff’s analysis resulted in total Cooperative test  
21            year revenues of \$23,603,288, expenses of \$20,442,961 and an operating margin of  
22            \$3,160,327; and Arizona test year revenues of \$4,561,895, expenses of \$3,313,514 and an  
23            operating margin of \$1,248,381.

24

1 *Operating Margin Adjustment No. 1 – Wholesale Power Cost Adjustment (“WPCA”) Revenue*

2 **Q. Is it necessary to include monies collected through the Cooperative’s WPCA in**  
3 **operating revenues as the Cooperative has done?**

4 A. No, it is not necessary. WPCA revenues are designed to reflect and recovery power cost  
5 variances occurring during the post rate case period, so that WPCA pass through are  
6 effectively offset by corresponding higher or lower costs. Since at the time of a new rate case,  
7 the expected level of purchased power costs are built into the Cooperative’s new base rates,  
8 the assumption is that WPCA revenues are re-set to zero, so no WPCA revenues would be  
9 shown in the Cooperative’s pro-forma test year income statement.

10  
11 Further, the WPCA revenues are set using a mechanism that is separate from that used to set  
12 base rates. Moreover, the Cooperative can change the WPCA rate, without action by the  
13 Commission, based on over- or under-collections in the Cooperative’s fuel bank.

14  
15 **Q. What is Staff’s recommendation?**

16 A. Staff recommends decreasing total Cooperative’s WPCA revenue shown in the Cooperative’s  
17 filing by \$335,951, but increasing Base revenue by \$335,951.

18  
19 Staff also recommends decreasing Arizona’s WPCA revenue shown in the Cooperative’s  
20 filing by \$274,946 to eliminate the WPCA revenue, but increasing Base revenue by \$274,946  
21 as shown on Schedules PNT-3, PNT-4 and PNT-5.

22  
23 **Q. What is the net effect of Staff’s recommendation?**

24 A. There is no net change to total Operating Revenues.

25

1 *Operating Margin Adjustment No. 2 – Purchased Power Expense and Transmission Operating and Maintenance*  
2 *(Transmission O & M”) Expense.*

3 **Q. Did Staff make any adjustments to the Purchased Power Expense and Transmission**  
4 **O & M Expense accounts?**

5 A. Yes. Staff decreased total Cooperative’s Purchased Power by \$65,545, and Arizona’s  
6 Purchased Power by \$354,040. Staff also increased total Cooperative’s Transmission O & M  
7 by \$65,545 and Arizona’s by \$11,781 as shown on Schedule PNT-4, PNT-5, and PNT-7.

8  
9 **Q. Please explain Staff’s adjustment to these two accounts.**

10 A. Staff’s recommended Arizona Purchased Power cost was calculated by multiplying Staff’s  
11 recommended Base Cost of Power (“BCOP”) per kWh, which is \$0.035346, by total  
12 44,348,385 kWh’s sold in Arizona during the test year, results in a total of \$1,567,523  
13 purchased power cost for Arizona. Greater details of Staff’s recommended BCOP are  
14 discussed in Staff Eric Hill’s testimony.

15  
16 Some costs such as PP-Greenway Program, Load Dispatching and Other Expenses were  
17 proposed to be included in Purchased Power Expense. Staff believes it’s not appropriate to  
18 include these costs in the Purchased Power account. Therefore, Staff reclassifies a total  
19 \$65,554 from total system’s Purchased Power account to total system’s Transmission O & M  
20 account. Then, Staff allocated 17.974 percent, which is \$11,781, to Arizona. Greater details  
21 of Staff’s recommended Purchased Power Expense are discussed by Staff witnesses Eric Hill.

22

1 *Operating Margin Adjustment No. 3 - Administrative and General Expense*

2 **Q. Did Staff make any adjustments to the Cooperative's Administrative and general**  
3 **Expense account?**

4 A. Yes. Staff decreased total Cooperative's Administrative and General Expense by \$526,600  
5 from \$4,917,419 to \$4,390,819, and Arizona's by \$75,860 from \$708,383 to \$632,523 as  
6 shown on schedule PNT-4, PNT-5 and PNT-8.

7  
8 **Q. How was this adjustment determined?**

9 A. This adjustment includes two components. The first component comprises the removal of  
10 \$139,798 post-retirement benefits since this benefit is no longer available after 2015, \$121,511  
11 bonuses, and \$58,094 purchases of flowers, gifts, donation, sponsorship, youth seminars,  
12 non-recurring events, and other expenses that were not deemed to be used and useful in  
13 provision of service. The second component is crediting \$207,196, an amortization of  
14 \$1,035,981 net Gain on Curtailment over five years, to the Administrative and General  
15 Expenses account. Then, a 14.41 percent of total \$526,600, of which is \$75,860 was allocated  
16 to Arizona.

17  
18 **Q. What is the Gain on Curtailment?**

19 A. In the past, Garkane offered its retiring employees and directors a post-retirement health  
20 benefit. Garkane accrued a future liability/expense each month to account for the estimated  
21 future payable based on an employee's number of years of service and the cost of the health  
22 insurance. However, in 2014, Garkane's Board of Directors voted to eliminate the post-  
23 retirement benefit. Anyone retiring after 2015 would not receive a post-retirement benefit.  
24 As a result, Garkane recognized the accurate amounts expensed in a prior years but no longer  
25 expected to be paid as a curtailment gain, a non-operating margin (below the line). Staff  
26 believes Garkane should effectively refund this amount to ratepayers since the ratepayers

1 prepaid for this expense that is no longer an obligation of the Cooperative. However, instead  
2 of recommending Garkane refund the money, Staff amortized this amount over five years  
3 and credited it to Administrative and General Expense.  
4

5 **Q. How is Net Gain on Curtailment of \$1,172,049 determined?**

6 A. There is \$1,172,049 Gain on Curtailment at the end of 2014. However, the liability related to  
7 post-retirement benefits for 2015 is \$136,068. Therefore, a liability of \$136,068 was  
8 subtracted from \$1,172,049 Gain on Curtailment, resulting in a net of \$1,035,981.  
9

10 **REVENUE REQUIREMENT – ARIZONA JURISDICTION**

11 **Q. What revenue requirement did Garkane propose for Arizona?**

12 A. Garkane proposed a Total Revenue decrease of \$152,128, or 3.33 percent, from \$4,561,895 to  
13 \$4,409,767 for Arizona as shown on Cooperative Schedule A-1 and H-1.  
14

15 **Q. What revenue requirement is Staff recommending for Arizona?**

16 A. Staff recommends a Total Revenue decrease of \$175,576, or 3.85 percent, from \$4,561,895 to  
17 \$4,386,319 for Arizona as shown on Schedule PNT-1 and PNT-4.  
18

19 **Q. How is Staff's recommended revenue for Arizona determined?**

20 A. Staff recommends a Total Revenue decrease of \$932,262, from \$23,603,288 to \$22,671,026  
21 for the total Cooperative. Then, the revenue requirement for Arizona was allocated based on  
22 Arizona adjusted base revenue as a percentage of total Cooperative adjusted base revenue as  
23 shown on supplemental schedule PNT-1. More details of Staff's recommended total  
24 Cooperative revenue requirement are discussed by Staff witness Darron Carlson.  
25

1 **Q. Does this conclude your direct testimony?**

2 **A. Yes, it does.**

**REVENUE REQUIREMENT**

| LINE<br>NO. DESCRIPTION  | (A)                       |              | (B)           |              | (C)                 |              | (D)           |              |
|--|---------------------------|--------------|---------------|--------------|---------------------|--------------|---------------|--------------|
|  | COOPERATIVE ORIGINAL COST |              |               |              | STAFF ORIGINAL COST |              |               |              |
|  | Total System              | Arizona      | Total System  | Arizona      | Total System        | Arizona      | Total System  | Arizona      |
| 1 Adjusted Rate Base   | \$ 60,782,310             | \$ 9,651,807 | \$ 60,782,310 | \$ 9,651,807 | \$ 60,782,310       | \$ 9,651,807 | \$ 60,782,310 | \$ 9,651,807 |
| 2 Adjusted Operating Margins (Loss) Before Interest on L.T. Debt | \$ 2,633,727              | \$ 830,262   | \$ 3,160,327  | \$ 1,248,381 | \$ 3,160,327        | \$ 1,248,381 | \$ 3,160,327  | \$ 1,248,381 |
| 3 Current Rate of Return (L2 / L1)                               | 4.33%                     | 8.60%        | 5.20%         | 12.93%       | 5.20%               | 12.93%       | 5.20%         | 12.93%       |
| 4 Proposed Operating Margins Before Interest on L.T. Debt        | \$ 3,433,016              | \$ 678,134   | \$ 2,228,065  | \$ 1,072,806 | \$ 2,228,065        | \$ 1,072,806 | \$ 2,228,065  | \$ 1,072,806 |
| 5 Proposed Rate of Return (L4 / L1)                              | 5.65%                     | 7.03%        | 3.67%         | 11.12%       | 3.67%               | 11.12%       | 3.67%         | 11.12%       |
| 6 Operating Income Deficiency (L4 - L2)                          | \$ 799,289                | \$ (152,128) | \$ (932,262)  | \$ (175,576) | \$ (932,262)        | \$ (175,576) | \$ (932,262)  | \$ (175,576) |
| 7 Gross Revenue Conversion Factor                                | 1.0000                    | 1.0000       | 1.0000        | 1.0000       | 1.0000              | 1.0000       | 1.0000        | 1.0000       |
| 8 Required Revenue Increase (L7 * L6)                            | \$ 799,289                | \$ (152,128) | \$ (932,262)  | \$ (175,576) | \$ (932,262)        | \$ (175,576) | \$ (932,262)  | \$ (175,576) |
| 9 Adjusted Test Year Revenue                                     | \$ 23,603,288             | \$ 4,561,895 | \$ 23,603,288 | \$ 4,561,895 | \$ 23,603,288       | \$ 4,561,895 | \$ 23,603,288 | \$ 4,561,895 |
| 10 Proposed Annual Revenue (L8 + L9)                             | \$ 24,402,577             | \$ 4,409,767 | \$ 22,671,026 | \$ 4,386,319 | \$ 22,671,026       | \$ 4,386,319 | \$ 22,671,026 | \$ 4,386,319 |
| 11 Required Increase in Revenue (%)                              | 3.39%                     | -3.33%       | -3.95%        | -3.85%       | -3.95%              | -3.85%       | -3.95%        | -3.85%       |
| 12 Interest Expense on Long-term Debt                            | \$ 1,442,214              | \$ 231,623   | \$ 1,442,214  | \$ 231,623   | \$ 1,442,214        | \$ 231,623   | \$ 1,442,214  | \$ 231,623   |
| 13 Proposed/Recommended TIER                                     | 2.85                      |              | 2.02          |              | 2.02                |              | 2.02          |              |
| 14 Proposed/ Recommended DSC                                     | 2.42                      |              | 2.00          |              | 2.00                |              | 2.00          |              |

References:

Columns A : Company Schedule A-2.0, B-2.0

Columns B : Company Schedule A-1.0, G-1.1 & G-2.1

Column D: Staff Schedules PNT-2, PNT-4, Testimony

Garkane Energy Cooperative, Inc.  
 Docket No. E-01891A-15-0176  
 Test Year Ended December 31, 2013

Supplemental Schedule PNT-1

| <u>Line</u> |                                | <u>Adjusted Revenue</u> | <u>Percentage of<br/>Total Base<br/>Revenue</u> | <u>Staff<br/>Recommended<br/>Change</u> | <u>Staff<br/>Recommended<br/>Revenue</u> | <u>Cooperative<br/>Proposed</u> |
|-------------|--------------------------------|-------------------------|---|---|--|---------------------------------|
| 1           | Base Revenue-Utah              | \$ 18,221,720           | 80.54%  | \$ (756,685.92)                         | \$ 17,465,034                            | \$ 19,101,137                   |
| 2           | Other Revenue-Utah             | 819,673                 |   | -                                       | 819,673                                  | 891,673                         |
| 3           | Total Revenue- Utah            | \$ 19,041,393           |   | \$ (756,686)                            | \$ 18,284,707                            | 19,992,810                      |
| 4           |                                |                         |   |   |  |                                 |
| 5           | Base Revenue-Arizona           | \$ 4,402,374            | 19.46%  | \$ (182,816)                            | \$ 4,219,558                             | 4,243,006                       |
| 6           | Other Revenue- Arizona         | 159,521                 |   | 7,240                                   | 166,761                                  | 166,761                         |
| 7           | Total Revenue- Arizona         | \$ 4,561,895            |   | \$ (175,576)                            | \$ 4,386,319                             | 4,409,767                       |
| 8           |                                |                         |   |   |  |                                 |
| 9           | Total Base Revenue-Cooperative | \$ 22,624,094           |   | \$ (939,502)                            | \$ 21,684,592                            | 23,416,143                      |
| 10          | Other Revenue- Cooperative     | 979,194                 |   | 7,240                                   | 986,434                                  | 986,434                         |
| 11          | Total Revenue- Cooperative     | \$ 23,603,288           |   | \$ (932,262)                            | \$ 22,671,026                            | \$ 24,402,577                   |

| <b>RATE BASE - ORIGINAL COST</b>     |                                  |                        |                      |  |                                 |
|--------------------------------------|----------------------------------|------------------------|----------------------|--|---------------------------------|
|                                      | [A]                              | [B]                    | [C]                  | [D]                                    | [E]                             |
| LINE<br>NO.                          | Total<br>Cooperative<br>as Filed | Arizona<br>as<br>Filed | Staff<br>Adjustments | Total<br>Cooperative<br>Staff Adjusted | Arizona<br>as<br>Staff Adjusted |
| 1 Plant in Service                   | \$ 97,516,738                    | \$ 15,661,436          | \$ -                 | \$ 97,516,738                          | \$ 15,661,436                   |
| 2 Less: Acc Depreciation & Amortizat | 37,792,643                       | 6,213,598              | -                    | 37,792,643                             | 6,213,598                       |
| 5 Net Plant in Service               | \$ 59,724,095                    | \$ 9,447,838           | \$ -                 | \$ 59,724,095                          | \$ 9,447,838                    |
| 6                                    |                                  |                        |                      |  |                                 |
| 7 <i>LESS:</i>                       |                                  |                        |                      |  |                                 |
| 8 Consumer Deposits                  | \$ 661,617                       | \$ 74,171              | \$ -                 | \$ 661,617.00                          | \$ 74,171                       |
| 9 Consumer Advances                  | 1,624,491                        | 265,968                | -                    | 1,624,491                              | 265,968                         |
| 10 Deferred Credits                  | -                                | -                      | -                    | -                                      | -                               |
| 11 Total                             | \$ 2,286,108                     | \$ 340,139             | \$ -                 | \$ 2,286,108                           | \$ 340,139                      |
| 12                                   |                                  |                        |                      |  |                                 |
| 13 <i>ADD:</i>                       |                                  |                        |                      |  |                                 |
| 14 Cash Working Capital Allowance    | \$ -                             | \$ -                   | \$ -                 | \$ -                                   | \$ -                            |
| 15 Materials and Supplies            | 3,186,846                        | 521,763                | -                    | 3,186,846                              | 521,763                         |
| 16 Prepayments                       | 157,477                          | 22,345                 | -                    | 157,477                                | 22,345                          |
| 17 Total                             | \$ 3,344,323                     | \$ 544,108             | \$ -                 | \$ 3,344,323                           | \$ 544,108                      |
| 18                                   |                                  |                        |                      |  |                                 |
| 19 <b>Total Rate Base</b>            | <b>\$ 60,782,310</b>             | <b>\$ 9,651,807</b>    | <b>\$ -</b>          | <b>\$ 60,782,310</b>                   | <b>\$ 9,651,807</b>             |

References:

Column A, Cooperative Schedule B-2  
Columns B : Cooperative Schedule G-3  
Column C: Schedule PNT-2  
Column D: Column A+ Column C  
Column E: Schedule PNT-2, testimony

|                                       |   | [A]                              | [B]                                       | [C]                  | [D]                                    | [E]                          |
|---------------------------------------|---|----------------------------------|---|----------------------|--|------------------------------|
|                                       |   | Total<br>Cooperative<br>AS FILED | Arizona<br>AS FILED                       | Staff<br>Adjustments | Total<br>Cooperative<br>Staff Adjusted | Arizona<br>Staff<br>Adjusted |
| LINE<br>NO.                           | DESCRIPTION                                   | REF: Cooperative<br>Schedule E-5 | REF: Cooperative<br>Schedule G 4.1, G-3.0 |                      | [A]+[C]                                |                              |
| Acct.<br>No. <u>PLANT IN SERVICE:</u> |   |                                  |   |                      |  |                              |
| 1                                     | <b>Production Plant</b>                       |                                  |   |                      |  |                              |
| 2                                     | 330 Land and Land Rights                      | \$ 328,300                       | \$ 59,111                                 | \$ -                 | \$ 328,300                             | \$ 59,111                    |
| 3                                     | 331 Structures & Improvements                 | 510,129                          | 91,850                                    | -                    | 510,129                                | 91,850                       |
| 4                                     | 332 Reservoirs, Dams & Waterways              | 3,222,261                        | 580,177                                   | -                    | 3,222,261                              | 580,177                      |
| 5                                     | 333 Water Wheels, Turbines & Generators       | 1,364,039                        | 245,599                                   | -                    | 1,364,039                              | 245,599                      |
| 6                                     | 334 Accessory Electric Equip                  | 230,085                          | 41,427                                    | -                    | 230,085                                | 41,427                       |
| 7                                     | 335 Misc. PP Equip                            | 35,979                           | 6,478                                     | -                    | 35,979                                 | 6,478                        |
| 8                                     | 336 Roads, Railroads, & Bridges               | 147,941                          | 26,637                                    | -                    | 147,941                                | 26,637                       |
| 9                                     | 344 Generators                                | 902,456                          | 162,490                                   | -                    | 902,456                                | 162,490                      |
| 10                                    | 345 Accessory Electric Equip - Other          | 272,061                          | 48,985                                    | -                    | 272,061                                | 48,985                       |
| 11                                    | Subtotal                                      | \$ 7,013,251                     | \$ 1,262,756                              | \$ -                 | \$ 7,013,251                           | \$ 1,262,756                 |
| 12                                    | <b>Transmission Plant</b>                     |                                  |   |                      |  |                              |
| 13                                    | 350 Land and Land Rights                      | \$ 2,336,075                     | \$ 416,145                                | \$ -                 | 2,336,075                              | \$ 416,145                   |
| 14                                    | 351 Clearing Land & ROW                       | 26,117                           | 4,652                                     | -                    | 26,117                                 | 4,652                        |
| 15                                    | 352 Structures & Improvements                 | 41,920                           | 7,468                                     | -                    | 41,920                                 | 7,468                        |
| 16                                    | 353 Station Equipment                         | 3,089,954                        | 550,439                                   | -                    | 3,089,954                              | 550,439                      |
| 17                                    | 354 Tower and Fixtures                        | 35,371                           | 6,301                                     | -                    | 35,371                                 | 6,301                        |
| 18                                    | 355 Poles and Fixtures                        | 8,603,206                        | 1,532,561                                 | -                    | 8,603,206                              | 1,532,561                    |
| 19                                    | 356 OH Conductors                             | 5,945,715                        | 1,059,160                                 | -                    | 5,945,715                              | 1,059,160                    |
| 20                                    | 359 Roads and Trails                          | 23,983                           | 4,272                                     | -                    | 23,983                                 | 4,272                        |
| 21                                    | Subtotal                                      | \$ 20,102,341                    | \$ 3,580,998                              | \$ -                 | \$ 20,102,341                          | \$ 3,580,998                 |
| 22                                    | <b>Distribution Plant</b>                     |                                  |   |                      |  |                              |
| 23                                    | 360 Land and Land Rights                      | \$ 639,350                       | \$ 100,099                                | \$ -                 | 639,350                                | \$ 100,099                   |
| 24                                    | 362 Substation Equipment                      | 14,254,059                       | 2,231,662                                 | -                    | 14,254,059                             | 2,231,662                    |
| 25                                    | 364 Poles, Towers & Fixtures                  | 10,099,673                       | 1,581,238                                 | -                    | 10,099,673                             | 1,581,238                    |
| 26                                    | 365 Conductors & Devices                      | 11,211,353                       | 1,755,286                                 | -                    | 11,211,353                             | 1,755,286                    |
| 27                                    | 366 Underground Conduit                       | 157,471                          | 24,654                                    | -                    | 157,471                                | 24,654                       |
| 28                                    | 367 Underground Conductors                    | 3,413,752                        | 534,468                                   | -                    | 3,413,752                              | 534,468                      |
| 29                                    | 368 Transformers                              | 10,985,556                       | 1,719,935                                 | -                    | 10,985,556                             | 1,719,935                    |
| 30                                    | 369 Services                                  | 3,129,009                        | 489,888                                   | -                    | 3,129,009                              | 489,888                      |
| 31                                    | 370 Meters                                    | 2,337,856                        | 366,022                                   | -                    | 2,337,856                              | 366,022                      |
| 32                                    | 371 Installations on Cons. Premises           | 121,536                          | 19,028                                    | -                    | 121,536                                | 19,028                       |
| 33                                    | 373 Street Lighting & Signal System           | 107,679                          | 16,859                                    | -                    | 107,679                                | 16,859                       |
| 34                                    | Subtotal                                      | \$ 56,457,294                    | \$ 8,839,139                              | \$ -                 | \$ 56,457,294                          | \$ 8,839,139                 |
| 35                                    | <b>General Plant</b>                          |                                  |   |                      |  |                              |
| 36                                    | 389 Land and Land Rights                      | \$ 663,589                       | \$ 94,159                                 | \$ -                 | 663,589                                | \$ 94,159                    |
| 37                                    | 390 Structures & Improvements                 | 3,555,850                        | 504,552                                   | -                    | 3,555,850                              | 504,552                      |
| 38                                    | 391 Office Furniture & Equipment              | 949,712                          | 134,758                                   | -                    | 949,712                                | 134,758                      |
| 39                                    | 392 Transportation                            | 2,703,000                        | 383,538                                   | -                    | 2,703,000                              | 383,538                      |
| 40                                    | 394 Tools, Shop & Garage                      | 81,422                           | 11,553                                    | -                    | 81,422                                 | 11,553                       |
| 41                                    | 395 Laboratory Equipment                      | 482,947                          | 68,527                                    | -                    | 482,947                                | 68,527                       |
| 42                                    | 396 Power Operated Equipment                  | 4,366,643                        | 619,599                                   | -                    | 4,366,643                              | 619,599                      |
| 43                                    | 397 Communications Equipment                  | 552,654                          | 78,418                                    | -                    | 552,654                                | 78,418                       |
| 44                                    | 398 Miscellaneous                             | 588,033                          | 83,438                                    | -                    | 588,033                                | 83,438                       |
| 45                                    | Subtotal                                      | \$ 13,943,850                    | \$ 1,978,543                              | \$ -                 | \$ 13,943,850                          | \$ 1,978,543                 |
| 46                                    |   |                                  |   |                      |  |                              |
| 47                                    | <b>Total Plant in Service</b>                 | \$ 97,516,736                    | \$ 15,661,436                             | \$ -                 | \$ 97,516,736                          | \$ 15,661,436                |
| 48                                    |   |                                  |   |                      |  |                              |
| 49                                    | Less: Accumulated Depreciation                | \$ 37,792,643                    | \$ 6,213,598                              | \$ -                 | \$ 37,792,643                          | \$ 6,213,598                 |
| 50                                    | Less: Accumulated Amortization                | -                                | -   | -                    | -                                      | -                            |
| 51                                    | Total Accumulated Depreciation & Amortization | \$ 37,792,643                    | \$ 6,213,598                              | \$ -                 | \$ 37,792,643                          | \$ 6,213,598                 |
| 52                                    |   |                                  |   |                      |  |                              |
| 53                                    | Net Plant in Service                          | \$ 59,724,092.93                 | \$ 9,447,838.00                           | \$ -                 | \$ 59,724,093                          | \$ 9,447,838.00              |
| 54                                    |   |                                  |   |                      |  |                              |
| 55                                    | <b>LESS:</b>                                  |                                  |   |                      |  |                              |
| 56                                    | Consumer Deposits                             | \$ 661,617                       | \$ 74,171                                 | \$ -                 | \$ 661,617                             | \$ 74,171                    |
| 57                                    | Consumer Advances                             | 1,624,491                        | 265,968                                   | -                    | 1,624,491                              | 265,968                      |
| 58                                    | Deferred Credits                              | -                                | -   | -                    | -                                      | -                            |
| 59                                    | Total   | \$ 2,286,108                     | \$ 340,139                                | \$ -                 | \$ 2,286,108                           | \$ 340,139                   |
| 60                                    |   |                                  |   |                      |  |                              |
| 61                                    | <b>ADD:</b>                                   |                                  |   |                      |  |                              |
| 62                                    | Cash Working Capital Allowance                | \$ -                             | \$ -                                      | \$ -                 | \$ -                                   | \$ -                         |
| 63                                    | Materials and Supplies                        | 3,186,846                        | 521,763                                   | -                    | 3,186,846                              | 521,763                      |
| 64                                    | Prepayments                                   | 157,477                          | 22,345                                    | -                    | 157,477                                | 22,345                       |
| 65                                    | Total   | \$ 3,344,323                     | \$ 544,108                                | \$ -                 | \$ 3,344,323                           | \$ 544,108                   |
| 66                                    |   |                                  |   |                      |  |                              |
| 67                                    | <b>Total Rate Base</b>                        | \$ 60,782,308                    | \$ 9,651,807                              | \$ -                 | \$ 60,782,308                          | \$ 9,651,807                 |

| Line No. | DESCRIPTION                                     | [A]                                  |   | [B]   |   | [C]   |   | [D]   |   | [E]   |   | [F]   |   | [G]   |   | [H]   |   | [I]   |   | [J]   |   |
|----------|---|--------------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|          |   | TOTAL COOPERATIVE TEST YEAR AS FILED | COOPERATIVE STAFF TEST YEAR ADJUSTMENTS NO. | TOTAL COOPERATIVE STAFF TEST YEAR ADJUSTMENTS NO. |
| 1        | Base Revenue                                    | \$ 22,288,143                        |   | \$ 335,951  | 1   | \$ 22,624,094                                     |   | \$ (939,502)                                      |   | \$ 21,684,592                                     |   | \$ 4,127,428                                      |   | \$ 274,946  | 1   | \$ 4,402,574                                      |   | \$ (182,816)                                      |   | \$ 4,219,558                                      |   |
| 2        | Wholesale Pwr Cost Adjustment (WPCA) Revenue    | 335,951                              |   | (335,951)   | 1   | -   |   | -   |   | 986,434   |   | 159,521   |   | 274,946   | 1   | -   |   | 7,240   |   | 166,761   |   |
| 3        | Other Revenues                                  | 979,194                              |   | -   |   | 979,194   |   | 7,240   |   | -   |   | -   |   | -   |   | -   |   | -   |   | -   |   |
| 4        | Total Revenues                                  | \$ 23,603,288                        |   | \$ -  |   | \$ 23,603,288                                     |   | \$ (932,262)                                      |   | \$ 22,671,026                                     |   | \$ 4,561,895                                      |   | \$ -  |   | \$ 4,561,895                                      |   | \$ (175,576)                                      |   | \$ 4,386,319                                      |   |
| 5        | EXPENSES:                                       |                                      |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 6        | Power Production Expense                        | \$ 536,351                           |   | \$ -  |   | \$ 536,351  |   | \$ -  |   | \$ 536,351  |   | \$ 96,401   |   | \$ -  |   | \$ 96,401   |   | \$ -  |   | \$ 96,401   |   |
| 7        | Purchased Power                                 | 8,845,175                            |   | (65,545)  | 2   | 8,779,630   |   | -   |   | 8,779,630   |   | 1,921,563   |   | (354,040)   | 2   | 1,567,523   |   | -   |   | 1,567,523   |   |
| 8        | Transmission O&M                                | 262,197                              |   | 65,545  | 2   | 327,742   |   | -   |   | 327,742   |   | 47,126  |   | 11,781  | 2   | 58,907  |   | -   |   | 58,907  |   |
| 9        | Distribution-Operations                         | 859,534                              |   | -   |   | 859,534   |   | -   |   | 859,534   |   | 123,158   |   | -   |   | 123,158   |   | -   |   | 123,158   |   |
| 10       | Distribution-Maintenance                        | 1,056,021                            |   | -   |   | 1,056,021   |   | -   |   | 1,056,021   |   | 160,171   |   | -   |   | 160,171   |   | -   |   | 160,171   |   |
| 11       | Consumer Accounting                             | 842,822                              |   | -   |   | 842,822   |   | -   |   | 842,822   |   | 98,878  |   | -   |   | 98,878  |   | -   |   | 98,878  |   |
| 12       | Customer Service                                | 93,868                               |   | -   |   | 93,868  |   | -   |   | 93,868  |   | 10,523  |   | -   |   | 10,523  |   | -   |   | 10,523  |   |
| 13       | Sales   | 24,262                               |   | -   |   | 24,262  |   | -   |   | 24,262  |   | 2,720   |   | -   |   | 2,720   |   | -   |   | 2,720   |   |
| 14       | Administrative & General                        | 4,917,419                            |   | (526,600)   | 3   | 4,390,819   |   | -   |   | 4,390,819   |   | 708,383   |   | (75,860)  | 3   | 632,523   |   | -   |   | 632,523   |   |
| 15       | Depreciation                                    | 2,871,262                            |   | -   |   | 2,871,262   |   | -   |   | 2,871,262   |   | 454,748   |   | -   |   | 454,748   |   | -   |   | 454,748   |   |
| 16       | Tax   | 660,650                              |   | -   |   | 660,650   |   | -   |   | 660,650   |   | 107,962   |   | -   |   | 107,962   |   | -   |   | 107,962   |   |
| 17       | Total Operating Expenses                        | \$ 20,969,561                        |   | \$ (526,600)                                      |   | \$ 20,442,961                                     |   | \$ -  |   | \$ 20,442,961                                     |   | \$ 3,731,633                                      |   | \$ (418,119)                                      |   | \$ 3,313,514                                      |   | \$ -  |   | \$ 3,313,514                                      |   |
| 18       | Operating Margin Before Interest on L.T. - Debt | \$ 2,633,727                         |   | \$ 526,600  |   | \$ 3,160,327                                      |   | \$ (932,262)                                      |   | \$ 2,228,065                                      |   | \$ 830,262  |   | \$ 418,119  |   | \$ 1,248,381                                      |   | \$ (175,576)                                      |   | \$ 1,072,806                                      |   |
| 19       | INTEREST ON LONG-TERM DEBT & OTHER DEDUCTIONS   |                                      |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 20       | Interest on Long-term Debt                      | \$ 1,442,214                         |   | -   |   | \$ 1,442,214                                      |   | -   |   | \$ 1,442,214                                      |   | \$ 231,623  |   | -   |   | \$ 231,623  |   | -   |   | \$ 231,623  |   |
| 21       | Interest - Other                                | 19,770                               |   | -   |   | 19,770  |   | -   |   | 19,770  |   | 3,175   |   | -   |   | 3,175   |   | -   |   | 3,175   |   |
| 22       | Other Deductions                                | -                                    |   | -   |   | -   |   | -   |   | -   |   | -   |   | -   |   | -   |   | -   |   | -   |   |
| 23       | Total Interest & Other Deductions               | \$ 1,461,984                         |   | \$ -  |   | \$ 1,461,984                                      |   | \$ -  |   | \$ 1,461,984                                      |   | \$ 234,798  |   | \$ -  |   | \$ 234,798  |   | \$ -  |   | \$ 234,798  |   |
| 24       | MARGINS (LOSS) AFTER INTEREST EXPENSE           | \$ 1,171,743                         |   | \$ 526,600  |   | \$ 1,698,343                                      |   | \$ (932,262)                                      |   | \$ 766,081  |   | \$ 595,464  |   | \$ 418,119  |   | \$ 1,013,583                                      |   | \$ (175,576)                                      |   | \$ 838,008  |   |
| 25       | NON-OPERATING MARGINS                           |                                      |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 26       | Interest Income                                 | \$ 41,437                            |   | -   |   | \$ 41,437   |   | \$ -  |   | \$ 41,437   |   | \$ -  |   | \$ -  |   | \$ -  |   | \$ -  |   | \$ -  |   |
| 27       | Other Margins                                   | 516,880                              |   | -   |   | 516,880   |   | -   |   | 516,880   |   | -   |   | -   |   | -   |   | -   |   | -   |   |
| 28       | G&T Capital Credits                             | 6,819                                |   | -   |   | 6,819   |   | -   |   | 6,819   |   | -   |   | -   |   | -   |   | -   |   | -   |   |
| 29       | Other Capital Credits                           | 133,633                              |   | -   |   | 133,633   |   | -   |   | 133,633   |   | -   |   | -   |   | -   |   | -   |   | -   |   |
| 30       | Total Non-Operating Margins                     | \$ 698,769                           |   | \$ -  |   | \$ 698,769  |   | \$ -  |   | \$ 698,769  |   | \$ -  |   | \$ -  |   | \$ -  |   | \$ -  |   | \$ -  |   |
| 31       | NET MARGINS (LOSS)                              | \$ 1,870,512                         |   | \$ 526,600  |   | \$ 2,397,112                                      |   | \$ (932,262)                                      |   | \$ 1,464,850                                      |   | \$ -  |   | \$ 418,119  |   | \$ -  |   | \$ (175,576)                                      |   | \$ 1,289,274                                      |   |

\* No Cost Allocation to Arizona is proposed/recommended for Non-Operating Margins

SUMMARY OF OPERATING MARGIN ADJUSTMENTS - TEST YEAR

| LINE NO. | REVENUES:                                     | DESCRIPTION | (A) TOTAL COOPERATIVE TEST YEAR AS FILED | (B) Pwr Cost Adjustor Ref: Sch PNT-5 | (C) Purchased Power and Transmission O&M Ref: Sch PNT-6 | (D) Administrative and General Ref: Sch PNT-7 | (E) TOTAL COOPERATIVE STAFF ADJUSTED [A]+(B)+(C)+(D) | (F) ARIZONA AS FILED Ref: Sch G-4 | (G) Pwr Cost Adjustor Ref: Sch PNT-5 | (H) Purchased Power and Transmission O&M Ref: Sch PNT-6 | (I) Administrative and General Ref: Sch PNT-7 | (J) ARIZONA STAFF ADJUSTED [F]+(G)+(H)+(I) |
|----------|---|-------------|--|--------------------------------------|---|---|--|-----------------------------------|--------------------------------------|---|---|--|
| 1        | Base Revenue                                  |             | \$ 22,288,143                            | \$ 335,951                           | \$ -  | \$ -  | \$ 22,624,094  | \$ 4,127,428                      | \$ 274,946                           | \$ -  | \$ -  | \$ 4,402,374                               |
| 2        | Wholesale Pwr Cost Adjustment (WPCA) Revenue  |             | \$ 335,951                               | \$ (335,951)                         | \$ -  | \$ -  | \$ -   | \$ 274,946                        | \$ (274,946)                         | \$ -  | \$ -  | \$ -                                       |
| 3        | Other Revenues                                |             | \$ 979,194                               | \$ -                                 | \$ -  | \$ -  | \$ 979,194   | \$ 159,521                        | \$ -                                 | \$ -  | \$ -  | \$ 159,521                                 |
| 4        | Total Revenues                                |             | \$ 23,603,288                            | \$ -                                 | \$ -  | \$ -  | \$ 23,603,288  | \$ 4,561,895                      | \$ -                                 | \$ -  | \$ -  | \$ 4,561,895                               |
| 5        | OPERATING EXPENSES:                           |             |  |                                      |   |   |  |                                   |                                      |   |   |  |
| 6        | Power Production Expense                      |             | \$ 536,351                               | \$ -                                 | \$ -  | \$ -  | \$ 536,351   | \$ 96,401                         | \$ -                                 | \$ -  | \$ -  | \$ 96,401                                  |
| 7        | Purchased Power                               |             | \$ 8,845,175                             | \$ -                                 | \$ (65,544.54)  | \$ -  | \$ 8,779,630   | \$ 1,921,663                      | \$ -                                 | \$ (354,040)  | \$ -  | \$ 1,567,523                               |
| 8        | Transmission O&M                              |             | \$ 262,197                               | \$ -                                 | \$ 65,544.54  | \$ -  | \$ 327,742   | \$ 47,126                         | \$ -                                 | \$ 11,781   | \$ -  | \$ 58,907                                  |
| 9        | Distribution-Operations                       |             | \$ 859,534                               | \$ -                                 | \$ -  | \$ -  | \$ 859,534   | \$ 123,158                        | \$ -                                 | \$ -  | \$ -  | \$ 123,158                                 |
| 10       | Distribution-Maintenance                      |             | \$ 1,056,021                             | \$ -                                 | \$ -  | \$ -  | \$ 1,056,021   | \$ 160,171                        | \$ -                                 | \$ -  | \$ -  | \$ 160,171                                 |
| 11       | Consumer Accounting                           |             | \$ 842,822                               | \$ -                                 | \$ -  | \$ -  | \$ 842,822   | \$ 98,878                         | \$ -                                 | \$ -  | \$ -  | \$ 98,878                                  |
| 12       | Customer Service                              |             | \$ 93,868                                | \$ -                                 | \$ -  | \$ -  | \$ 93,868  | \$ 10,523                         | \$ -                                 | \$ -  | \$ -  | \$ 10,523                                  |
| 13       | Sales   |             | \$ 24,262                                | \$ -                                 | \$ -  | \$ -  | \$ 24,262  | \$ 2,720                          | \$ -                                 | \$ -  | \$ -  | \$ 2,720                                   |
| 14       | Administrative & General                      |             | \$ 4,917,419                             | \$ -                                 | \$ (526,600)  | \$ -  | \$ 4,390,819   | \$ 708,383                        | \$ -                                 | \$ (75,860)   | \$ -  | \$ 632,523                                 |
| 15       | Depreciation                                  |             | \$ 2,871,262                             | \$ -                                 | \$ -  | \$ -  | \$ 2,871,262   | \$ 454,748                        | \$ -                                 | \$ -  | \$ -  | \$ 454,748                                 |
| 16       | Tax   |             | \$ 660,650                               | \$ -                                 | \$ -  | \$ -  | \$ 660,650   | \$ 107,962                        | \$ -                                 | \$ -  | \$ -  | \$ 107,962                                 |
| 17       | Total Operating Expenses                      |             | \$ 20,969,561                            | \$ -                                 | \$ -  | \$ (526,600)                                  | \$ 20,442,961  | \$ 3,731,633                      | \$ -                                 | \$ (342,260)  | \$ (75,860)                                   | \$ 3,313,514                               |
| 18       | Operating Margin Before Interest on L.T. Debt |             | \$ 2,633,727                             | \$ -                                 | \$ -  | \$ -  | \$ 3,160,327   | \$ 830,262                        | \$ -                                 | \$ 342,260  | \$ -  | \$ 1,248,381                               |
| 19       | INTEREST ON LONG-TERM DEBT & OTHER DEDUCTIONS |             | \$ 1,442,214                             | \$ -                                 | \$ -  | \$ -  | \$ 1,442,214   | \$ 231,623                        | \$ -                                 | \$ -  | \$ -  | \$ 231,623                                 |
| 20       | Interest - Long-Term Debt                     |             | \$ 18,770                                | \$ -                                 | \$ -  | \$ -  | \$ 18,770  | \$ 3,175                          | \$ -                                 | \$ -  | \$ -  | \$ 3,175                                   |
| 21       | Interest - Other                              |             | \$ -                                     | \$ -                                 | \$ -  | \$ -  | \$ -   | \$ -                              | \$ -                                 | \$ -  | \$ -  | \$ -                                       |
| 22       | Other Deductions                              |             | \$ 1,481,984                             | \$ -                                 | \$ -  | \$ -  | \$ 1,481,984   | \$ 234,798                        | \$ -                                 | \$ -  | \$ -  | \$ 234,798                                 |
| 23       | Total Interest & Other Deductions             |             | \$ 1,481,984                             | \$ -                                 | \$ -  | \$ -  | \$ 1,481,984   | \$ 234,798                        | \$ -                                 | \$ -  | \$ -  | \$ 234,798                                 |
| 24       | MARGINS (LOSS) AFTER INTEREST EXPENSE         |             | \$ 1,171,743                             | \$ -                                 | \$ -  | \$ -  | \$ 1,898,343   | \$ 595,464                        | \$ -                                 | \$ 342,260  | \$ -  | \$ 1,013,583                               |
| 25       | NON-OPERATING MARGINS                         |             |  |                                      |   |   |  |                                   |                                      |   |   |  |
| 26       | Interest Income                               |             | \$ 41,437                                | \$ -                                 | \$ -  | \$ -  | \$ 41,437  | \$ -                              | \$ -                                 | \$ -  | \$ -  | \$ -                                       |
| 27       | Other Margins                                 |             | \$ 516,880                               | \$ -                                 | \$ -  | \$ -  | \$ 516,880   | \$ -                              | \$ -                                 | \$ -  | \$ -  | \$ -                                       |
| 28       | G&T Capital Credits                           |             | \$ 6,819                                 | \$ -                                 | \$ -  | \$ -  | \$ 6,819   | \$ -                              | \$ -                                 | \$ -  | \$ -  | \$ -                                       |
| 29       | Other Capital Credits                         |             | \$ 133,633                               | \$ -                                 | \$ -  | \$ -  | \$ 133,633   | \$ -                              | \$ -                                 | \$ -  | \$ -  | \$ -                                       |
| 30       | Total Non-Operating Margins                   |             | \$ 698,769                               | \$ -                                 | \$ -  | \$ -  | \$ 698,769   | \$ -                              | \$ -                                 | \$ -  | \$ -  | \$ -                                       |
| 31       | NET MARGINS (LOSS)                            |             | \$ 1,870,512                             | \$ -                                 | \$ -  | \$ -  | \$ 2,397,112   | \$ -                              | \$ -                                 | \$ 342,260  | \$ -  | \$ -                                       |

\* No Cost Allocation to Arizona is proposed/recommended for Non-Operating Margins.

OPERATING MARGIN ADJUSTMENT NO. 1 - WHOLESALE POWER COST ADJUSTMENT REVENUE

Total Cooperative

| LINE NO. | DESCRIPTION   | [A]                        | [B]               | [C]                           |
|----------|---|----------------------------|-------------------|-------------------------------|
|          |   | Total Cooperative As filed | STAFF ADJUSTMENTS | Total Cooperative AS ADJUSTED |
| 1        | <u>Revenues</u>   |                            |                   |                               |
| 2        | Base Revenue  | \$ 22,288,143              | \$ 335,951        | \$ 22,624,094                 |
| 3        | To Eliminate Wholesale Power Cost Adjustment ("WPCA") Revenue | \$ 335,951                 | \$ (335,951)      | -                             |

Arizona

| LINE NO. | DESCRIPTION   | [A]              | [B]               | [C]                 |
|----------|---|------------------|-------------------|---------------------|
|          |   | Arizona As filed | STAFF ADJUSTMENTS | Arizona AS ADJUSTED |
| 4        | <u>Revenues</u>   |                  |                   |                     |
| 5        | Base Revenue  | \$ 4,127,428     | \$ 274,946        | \$ 4,402,374        |
| 6        | To Eliminate Wholesale Power Cost Adjustor ("WPCA") Revenue | \$ 274,946       | \$ (274,946)      | -                   |

References:

- Column A: Cooperative Schedules A-2
- Column B: Staff's Testimony
- Column C: Column A + Column B

**OPERATING MARGIN ADJUSTMENT NO. 2 - PURCHASED POWER COST AND TRANSMISSION O&M**

**Total Cooperative**

| LINE NO. | DESCRIPTION      | [A]                        | [B]               | [C]                           |
|----------|------------------|----------------------------|-------------------|-------------------------------|
|          |                  | Total Cooperative As filed | STAFF ADJUSTMENTS | Total Cooperative AS ADJUSTED |
| 1        | Purchased Power  | \$ 8,845,175               | \$ (65,545)       | \$ 8,779,630                  |
| 2        | Transmission O&M | \$ 262,197                 | \$ 65,545         | \$ 327,742                    |

**Arizona**

| LINE NO. | DESCRIPTION      | [A]              | [B]               | [C]                 |
|----------|------------------|------------------|-------------------|---------------------|
|          |                  | Arizona As filed | STAFF ADJUSTMENTS | Arizona AS ADJUSTED |
| 3        | Purchased Power  | \$ 1,921,563     | \$ (354,040)      | \$ 1,567,523        |
| 4        | Transmission O&M | \$ 47,126        | \$ 11,781         | \$ 58,907           |

|   | Current BCOP                              | Difference   | Recommended BCOP |              |
|---|---|--------------|------------------|--------------|
| 5 | Test Year Sales (In kWhs) in Arizona      | 44,348,385   | -                | 44,348,385   |
| 6 | Multiplied by: Base Cost of Power per kWh | 0.02558      | 0.0097657        | 0.035346     |
| 7 | Total Purchased Power Cost in Arizona     | \$ 1,134,432 | \$ 433,091       | \$ 1,567,523 |

References:

- Column A: Cooperative Schedules A-2
- Column B: Staff's Testimony
- Column C: Column A + Column B

**OPERATING MARGIN ADJUSTMENT NO. 3 - ADMINISTRATIVE AND GENERAL**

**Total Cooperative**

|          |                          | [A]                        | [B]               | [C]                           |
|----------|--------------------------|----------------------------|-------------------|-------------------------------|
| LINE NO. | DESCRIPTION              | Total Cooperative As filed | STAFF ADJUSTMENTS | Total Cooperative AS ADJUSTED |
| 1        | Administrative & General | \$ 4,917,419               | \$ (526,600)      | \$ 4,390,819                  |

**Arizona**

| LINE NO. | DESCRIPTION              | Arizona As filed | STAFF ADJUSTMENTS | Arizona AS ADJUSTED |
|----------|--------------------------|------------------|-------------------|---------------------|
| 2        | Administrative & General | \$ 708,383       | \$ (75,860)       | \$ 632,523          |

References:

- Column A: Cooperative Schedules A-2
- Column B: Staff's Testimony
- Column C: Column A + Column B

OPERATING MARGIN ADJUSTMENT NO. 3 - ADMINISTRATIVE AND GENERAL (Cont.)

|   |                |                   |
|---|----------------|-------------------|
| <b>Post Retirement Benefit</b>          |                | <b>\$ 139,798</b> |
| <b>Bonuses</b>                          |                | <b>121,511</b>    |
| <b>Others</b>                           |                |                   |
| Employee gift card purchase             | \$ 18,100      |                   |
| Extra gift cards                        | 1,614          |                   |
| X-mas gift cards purchase               | 2,130          |                   |
| 2013 leadership summit                  | 300            |                   |
| 75th anniversary signs                  | 936            |                   |
| 75th anniversary signs                  | 702            |                   |
| 75th anniversary stones for lobbies     | 625            |                   |
| 75th anniversary-1st place winner       | 300            |                   |
| 75th anniversary-2nd place winner       | 150            |                   |
| 75th anniversary-3rd place              | 50             |                   |
| Christmas candy                         | 1,035          |                   |
| Christmas gifts for large acct          | 6,146          |                   |
| Christmas poinsettias                   | 289            |                   |
| Deseret ladies time out - supplies      | 850            |                   |
| Donation - contribution                 | 250            |                   |
| Donation - contribution                 | 100            |                   |
| Dinner & western buffets                | 567            |                   |
| Electrifying haltime shot               | 500            |                   |
| Electrifying shot winner                | 500            |                   |
| Employee - director dinner              | 3,698          |                   |
| Employee/director dinner expenses       | 1,796          |                   |
| Escalante little league sponsorship     | 250            |                   |
| Fishlake relay sponsorship              | 500            |                   |
| Flowers                                 | 43             |                   |
| Flowers                                 | 111            |                   |
| Flowers                                 | 43             |                   |
| Flowers -B Brooks wife                  | 38             |                   |
| Flowers - C Cropper congratulations     | 84             |                   |
| Flowers - Cory Anderson father          | 50             |                   |
| Flowers - Keith Forsyth                 | 82             |                   |
| Flowers - Mary Lou bunting              | 30             |                   |
| Flowers - Robin Campbell                | 49             |                   |
| Flowers - sanders service               | 53             |                   |
| Flowers - secretaries day               | 64             |                   |
| Graduation advertising                  | 110            |                   |
| Region 20 girls bb ad                   | 40             |                   |
| Region 9 meeting                        | 3,125          |                   |
| Region b-ball sponsor                   | 450            |                   |
| Region boy's bb ad full page            | 100            |                   |
| Sponsorship                             | 75             |                   |
| Sponsorship - Wasatch back Ragnar relay | 250            |                   |
| Sponsorship of co-ed volleyball team    | 75             |                   |
| State 1a b-ball boys/girls tournament   | 800            |                   |
| Triple c arena events sponsor           | 500            |                   |
| Washington dc youth tour - Neal         | 2,410          |                   |
| Your board's culture - carl Boyd        | 550            |                   |
| Youth leadership conference             | 7,425          |                   |
| Youth softball sponsorship              | 150            |                   |
| <b>Total Others</b>                     | <b>58,095</b>  |                   |
| Gain on Curtailment                     | 1,172,049      |                   |
| 2015 Liability                          | (136,068)      |                   |
| Net Gian on Curtailment                 | 1,035,981      |                   |
| Amortization Rate( 5 years)             | 0.2            |                   |
| <b>Annual Amortization</b>              | <b>207,196</b> |                   |
|   |                | <b>\$ 526,600</b> |

**BEFORE THE ARIZONA CORPORATION COMMISSION**

SUSAN BITTER SMITH  
Chairman  
BOB STUMP  
Commissioner  
BOB BURNS  
Commissioner  
DOUG LITTLE  
Commissioner  
TOM FORESE  
Commissioner

IN THE MATTER OF THE APPLICATION OF )  
GARKANE ENERGY COOPERATIVE, INC. )  
FOR A DETERMINATION OF THE FAIR )  
VALUE OF ITS PROPERTY FOR )  
RATEMAKING PURPOSES. TO FIX A JUST )  
AND REASONABLE RETURN THEREON, )  
AND TO APPROVE RATES DESIGNED TO )  
DEVELOP SUCH RETURN AND REQUEST )  
FOR WAIVER. )  
\_\_\_\_\_)

DOCKET NO. E-01891A-15-0176

DIRECT  
TESTIMONY  
OF  
MARGARET (TOBY) LITTLE  
CONSULTANT  
UTILITIES DIVISION  
ARIZONA CORPORATION COMMISSION

DECEMBER 21, 2015

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**EXHIBIT**

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**EXECUTIVE SUMMARY  
GARKANE ENERGY COOPERATIVE, INC.  
DOCKET NO. E-01851A-15-0176**

Margaret (Toby) Little's testimony presents the results of Utilities Division Staff's ("Staff") review of the rate case application ("Application") of Garkane Energy Cooperative, Inc. ("Garkane" or "Cooperative" or "GEC") filed with the Arizona Corporation Commission ("Commission") on June 1, 2015, and the results of Staff's engineering evaluation of the Cooperative's electric distribution system in Arizona.

Based on its review of Garkane's Application, inspection of the Cooperative's electric system, discussions with the Cooperative's General Manager Dan McClendon and Chief Engineer Mike Avant, and responses to data requests, Staff's conclusions are as follows:

- a. Garkane is operating and maintaining its electrical system properly,
- b. Garkane is carrying out system improvements, upgrades and new additions to meet the current and projected load of the Cooperative in an efficient and reliable manner. These improvements, system upgrades and new construction are reasonable and appropriate. The Cooperative's plant in service for the Arizona service territory is "used and useful;"
- c. The Cooperative has an acceptable level of system losses, consistent with the industry guidelines, and
- d. GEC has a satisfactory record of service interruptions in the historic period from 2008 thru 2012, reflecting satisfactory quality of service.

1 **INTRODUCTION**

2 **Q. Please state your name and business address.**

3 A. My name is Margaret (Toby) Little. My business address is 1200 West Washington Street,  
4 Phoenix, Arizona 85007.

5  
6 **Q. By whom and in what capacity are you employed?**

7 A. I am employed by the Arizona Corporation Commission ("Commission") as a Utilities  
8 Contractor.

9  
10 **Q. Please describe your educational background.**

11 A. I received both my Bachelors and Master's Degrees in Electrical Engineering from New  
12 Mexico State University. I graduated with my Bachelor's Degree in July 1972, and received  
13 my Master's Degree in January 1979. My Master's Program at New Mexico State University  
14 was in Electric Utility Management. I received my Professional Engineering ("P.E.") License  
15 in the state of California in 1980.

16  
17 **Q. Please describe your pertinent work experience.**

18 A. I worked at the Arizona Corporation Commission from September 2010 to February 2011 as  
19 a Utilities Contractor, was employed by the Commission from February 2011 to February  
20 2012 an Electric Utilities Engineer, and have been a Utilities Contractor since February 2012.  
21 During this time I have performed engineering analyses for financing and rate cases,  
22 coordinated the Seventh and Eighth Biennial Transmission Assessments, reviewed utilities'  
23 load curtailment plans and summer preparedness plans, and conducted various other  
24 engineering analyses. From 1983 through 1987 I was the Supervisor of System Planning for  
25 Anchorage Municipal Light and Power, the second largest utility in Alaska. There I had  
26 overall responsibility for distribution, transmission and resource planning for the utility and

1 supervised six electrical engineers. From 1979 through 1982 and 1987 through 1988 I  
2 worked for R.W. Beck and Associates, a nationally recognized engineering firm. There I  
3 performed many types of engineering analyses involving resource and transmission planning  
4 and worked on the engineer's reports for the financing of a major generation facility in  
5 northern California. Prior to that, I worked in the System Planning Sections of San Diego  
6 Gas and Electric Company and Hawaiian Electric Company, where I had responsibility for  
7 short and long range distribution planning.

8  
9 **PURPOSE OF TESTIMONY**

10 **Q. As part of your assigned duties at the Commission, did you perform an analysis of the**  
11 **application that is the subject of this proceeding?**

12 A. Yes, I did.

13  
14 **Q. Is your testimony herein based on that analysis?**

15 A. Yes, it is.

16  
17 **Q. What is the purpose of your prefiled testimony?**

18 A. The purpose of my testimony is to present the results of Utilities Division Staff's ("Staff")  
19 engineering evaluation of Garkane Electric Cooperative's ("Garkane" or "Cooperative" or  
20 "GEC") electric distribution system operations and planning in the state of Arizona.

21  
22 **ENGINEERING REVIEW**

23 **Q. Did you perform an engineering evaluation of Garkane's electrical system?**

24 A. Yes, I did. Based on a review of Garkane's rate application ("Application"), a site visit in  
25 which I inspected parts of Garkane's electric distribution system in Arizona and held

1 discussions with members of GEC staff, and responses to data requests from Staff, I  
2 prepared an engineering report presenting my findings.

3

4 **Q. Is the engineering evaluation report a part of your testimony today?**

5 A. Yes it is. It is attached as Exhibit I.

6

7 **CONCLUSIONS**

8 **Q. What conclusions are derived based on Staff's engineering evaluation of GEC's**  
9 **electric distribution system in Arizona?**

10 A. Staff's conclusions are as follows:

11

12 a. Garkane is operating and maintaining its electrical system properly,

13

14 b. Garkane is carrying out system improvements, upgrades and new additions to meet  
15 the current and projected load of the Cooperative in an efficient and reliable manner.  
16 These improvements, system upgrades and new construction are reasonable and  
17 appropriate. The Cooperative's plant in service is "used and useful,"

18

19 c. The Cooperative has acceptable level of system losses, consistent with the industry  
20 guidelines, and

21

22 d. The Cooperative has a satisfactory record of service interruptions in the historic  
23 period from 2008 thru 2012, reflecting satisfactory system reliability and quality of  
24 service.

25

1 **Q. Does this conclude your testimony?**

2 **A. Yes, it does**

**MEMORANDUM**

TO: Eric Hill  
Executive Consultant  
Utilities Division

FROM: Margaret (Toby) Little  
Electric Utilities Engineer  
Utilities Division

THRU: Del Smith  
Engineering Supervisor  
Utilities Division

DATE: November 6, 2015

RE: STAFF ENGINEERING REPORT FOR APPLICATION OF GARKANE ENERGY COOPERATIVE, INC., AN ELECTRIC COOPERATIVE NONPROFIT MEMBERSHIP CORPORATION, FOR A DETERMINATION OF THE FAIR VALUE OF ITS PROPERTY FOR RATEMAKING PURPOSES, TO FIX A JUST AND REASONABLE RETURN THEREON, AND TO APPROVE RATES DESIGNED TO DEVELOP SUCH RETURN AND REQUEST FOR WAIVER (DOCKET NO. E-01891A-15-0176)

**GENERAL**

Garkane Energy Cooperative, Inc. ("Garkane," "Cooperative," or "GEC") submitted an application on June 1, 2015 to the Arizona Corporation Commission ("Commission") for determination of the fair value of its property for ratemaking purposes, to fix a just and reasonable return thereon, to approve rates, charges, and tariffs designed to develop such return, and for approval of a Prepaid Service Tariff, a Net Metering Service Tariff, and a Line Extension Policy that are consistent with terms and conditions applicable to GEC's member/customers located in Utah. The Cooperative also submitted for re-filing its Electric Service Regulations that have been on file with the Commission since 1998 (corrected for typographical errors and factual updates as to GEC's name and primary business location). In addition, to allow for more uniform rates and terms of service system-wide, the Cooperative seeks in the Application a waiver of any and all Commission rules inconsistent with the rates, tariffs, and regulations approved in the Application docket.

**ENGINEERING EVALUATION**

Garkane's service area is located primarily in Central and Southern Utah and includes a portion of northeastern Arizona. GEC is a member owned non-profit electric cooperative. It is governed by an 11 member Board of Directors elected by its member-customers. Its 16,000 square miles of service territory encompass parts of six counties in South-Central Utah, as well as part of Mohave and Coconino Counties, Arizona. Ninety percent of its service territory consists of federal

and state lands, including four National Parks, two National Monuments and a National Recreational Area. Despite its extensive service territory, GEC serves only 11,405 members in Utah and 1,439 members in Arizona. Approximately 18% of its total revenue is generated from Arizona members. The division between Arizona and Utah is driven solely by the happenstance of jurisdictional boundaries of two adjoining States, not by operational realities.

#### *Garkane Site Visit*

Staff represented by Margaret (Toby) Little met with GEC Staff on September 16, 2015. During the visit, the history of the Cooperative's operations in Arizona and their organization related to customer service, planning, engineering, construction, system operations, meters, rates and maintenance were discussed. Also discussed were their responses to Staff's data requests.

Staff met with Dan McClendon, Chief Executive Officer, Mike Avant, Engineering Manager, and Jeff Vaughn, Area Manager. Cost, location, and reason for major construction projects as outlined in the responses to Staff data requests were discussed as well as points of delivery and source of wholesale power purchases, system loss values, operations procedures on the Arizona electric system, inspection procedures, system characteristics; and potential for growth. Mike Avant then took Staff on an inspection of the facilities both located in Arizona and located in Utah but used to provide service to Arizona customers.

#### *Electric System Description*

Garkane owns a small hydroelectric facility that serves approximately 10 percent of its load, has a Western Area Power Administration ("WAPA") Allocation<sup>1</sup> that provides power for approximately 20 percent of total load, and is a member of Deseret Power Electric Cooperative ("Deseret"), a generation and transmission cooperative located in Utah, from which the remainder (approximately 70 percent) of their load requirement is purchased.

They receive power at three delivery points on their system: from Glen Canyon Dam in Arizona, North of Loa and West of Twin Cities, both in Utah. Because it serves primarily rural load, most of the distribution system, (with the exception of the towns and cities), is radial.

Garkane's electric system within Arizona includes 144.22 miles of overhead distribution line and 20.93 miles of underground distribution. There is one substation located in Arizona and one in Southern Utah from which the Arizona load is served. Both substations also serve Utah load.

#### *Electric System Characteristics*

At year-end in 2014, Garkane served 1,434 customers of which 1,147 were residential, 221 were commercial, and 66 were classified as "Other." The accounts classified as "Other" are public buildings and irrigation; the Cooperative does not serve any industrial customers in Arizona.

---

<sup>1</sup> WAPA Allocation of federally owned and operated power generation (primarily hydroelectric facilities)

The year-end number of services in Arizona, including all classes of customers, increased from 1,414 in 2010 to 1,423 in 2014, an average annual increase of less than one percent.

Garkane's actual Arizona system peak load and energy along with number of customers are listed below:

**Historical System Characteristics**

| Year | Year End Number of Customers | Actual Peak Demand (MW) | Annual Demand Growth (%) | Annual Load (MWh) | Annual Load Growth (%) |
|------|------------------------------|-------------------------|--------------------------|-------------------|------------------------|
| 2010 | 1414                         | 8.50                    |                          | 38091             |                        |
| 2011 | 1412                         | 9.22                    | 8.5                      | 40570             | 6.5                    |
| 2012 | 1427                         | 10.00                   | 8.5                      | 44094             | 8.7                    |
| 2013 | 1447                         | 13.14                   | 31.4                     | 46262             | 4.9                    |
| 2014 | 1434                         | 11.11                   | (15.4)                   | 44407             | (4.0)                  |

When asked about the unusual peak demand reading in 2013, Garkane staff indicated that although the peak normally occurs in the summer, 2013 was a particularly cold year and the peak that year occurred in December. Peak demand is often dependent on weather and is not always a good indicator of actual growth on an electric system; a better indicator is average total annual load. The average annual increase in peak demand from 2010 to 2014 was 7.7 percent; the average annual increase in annual load was 4.1% over the same period.

The seeming disparity between average customer growth (less than one percent) and average load growth (4.1 percent) was explained by GEC staff as due to several changes that occurred over a period of after the re-acquisition of the Colorado City system. Metering errors were corrected, (wrong multipliers, miswired instrument transformer installations, and services that were not metered). In addition, a decrease in rates for the Colorado City area at the time of the acquisition (about 20%) resulted in the addition or re-activation of several large accounts.

*Annual System Losses*

Garkane's Arizona system is very rural, with an average of slightly over five customers per mile of distribution line. As a result, losses can be expected to be greater than on an electric system with a higher customer density; long lines at a distribution voltage result in more system losses. The American Public Power Association's Distribution System Loss Evaluation Manual ("Manual") indicates that system losses of 10% are reasonable for a mostly rural system. No data exists for system losses on the Arizona-only portion of GEC's electric system, however it is reasonable to assume that the Arizona system has a loss pattern similar to that of the Cooperatives' total system because the Utah system is also very rural, and as was noted earlier, the system is operated as a whole. Garkane's annual total system losses for the last five years were:

| <u>Year</u> | <u>Percent System Losses</u> |
|-------------|------------------------------|
| 2009        | 9.4%                         |
| 2010        | 8.4%                         |
| 2011        | 9.11%                        |
| 2012        | 8.86%                        |
| 2013        | 8.68%                        |

Garkane’s annual historic system losses average 8.89 percent for this five year period, which is well within the guidelines set forth in the Manual. Garkane has worked hard over the years to keep losses to a minimum, purchasing and installing low-loss transformers, upgrading distribution lines where appropriate, and maintaining system voltage. It is also worth noting that losses for the system have decreased over the period.

*Quality of Service*

The outages that occur in a utility’s system stem from a variety of causes and are an indicator of the quality of service to customers. Some of these causes are storm-related; others are relative to switching surges, equipment failure and planned outages. The historical data relative to Garkane’s distribution system outages as measured by the System Average Interruption Duration Index (SAIDI) which measures the average outage minutes per customer on an annual basis, for the period 2010 through 2014, is shown in the table below.

**Annual System Average Interruption Duration Index in Minutes**

| <b>YEAR</b>       | <b>SYSTEM AVERAGE INTERRUPTION DURATION INDEX - MINUTES</b> |                |                  |                                     |                     |                   |
|-------------------|---|----------------|------------------|-------------------------------------|---------------------|-------------------|
|                   | <i>Power Supplier</i>                                       | <i>Planned</i> | <i>All Other</i> | <i>Total Excluding Major Events</i> | <i>Major Events</i> | <i>All Events</i> |
| 2010              | 0.2   | 0.0            | <b>101.5</b>     | 101.7                               | <b>1054.6</b>       | <b>1156.3</b>     |
| 2011              | 17.0  | 0.0            | <b>79.0</b>      | 96.0                                | <b>74.0</b>         | <b>170.0</b>      |
| 2012              | 0.0   | 0.0            | <b>22.7</b>      | 22.7                                | <b>572.7</b>        | <b>595.4</b>      |
| 2013              | 0.0   | 22.5           | <b>147.9</b>     | 170.4                               | <b>118.5</b>        | <b>288.9</b>      |
| 2014              | 0.0   | 0.0            | <b>66.5</b>      | 67.2                                | <b>0.0</b>          | <b>67.2</b>       |
| Five-Year Average | 3.4   | 4.6            | <b>83.5</b>      | 91.6                                | <b>364.0</b>        | <b>455.6</b>      |

According to the Rural Utilities Service (“RUS”) Bulletins which Staff uses to judge the adequacy of a cooperative’s reliability, a concern would exist when the SAIDI for “All Other”

exceeds 200 minutes<sup>2</sup>. GEC's service quality over the five year period in terms of this metric has ranged from 22.7 minutes to 170.4 minutes with an average of 91.6 minutes, all below the level of concern. Of note is that GEC's outage rate for the "All Other" category is significantly below the level of concern with the exception of one year in which the utility suffered the loss of a line due to a storm that caused an unusually extended outage. For the remaining four years, which are more indicative of the general reliability of the Arizona system, the average is 71.7 minutes, reflecting a well maintained and operated distribution system.

#### *Distribution System Inspection*

During the site visit on September 16, Staff inspected all of the major substations and portions of the transmission, sub-transmission and distribution systems, including the locations of system improvements and upgrades that have been made in the last few years and as described in the information provided by Garkane in the Application and Staff Data Requests.

Major projects inspected included a new 69-34.5 kV 10 MVA transformer at Twin Cities Substation to feed Colorado City in Arizona and Hildale in Utah (collectively referred to as "Twin Cities"), a three phase line extension in the Cane Beds School Boundry, upgrade to a 15 MVA transformer at the Twin Cities Substation and a new 138 kV transmission line in Utah that serves the Twin Cities Substation, (serving Arizona load in Colorado City). Garkane follows the RUS design standards for their facilities.

In general the Garkane electric system appears to be well planned and maintained. No deficiencies or obvious problems were observed during the inspection tour. It was especially noted that the substations are extremely well maintained, with safety-related equipment installed.

The Cooperative's routine maintenance program appears robust. It includes, but is not limited to, routine inspection of all poles with replacement as necessary, monthly substation inspections, and annual infra-red inspection and annual oil sampling for large equipment. They specify low-loss transformers and regularly test them before installation on their system, contributing to the relatively low losses on their system.

Garkane uses technology to achieve efficiencies including automated meter reading over power line carrier, SCADA control of all but two substations on their system, (they are in the process of installing SCADA on the remaining two substations), and asset information is maintained in a database including Geographical Information System ("GIS") location information.

---

<sup>2</sup> As shown, outage statistics are categorized into four major causes. Power Supplier and Planned causes are separated because they represent causes over which the cooperative has virtually no control or total control, respectively, and should be analyzed separately. Major Events include outages on major event days which are days when the daily average outage minutes per customer exceed a threshold value. The threshold is determined based upon a formula specified in the RUS Bulletin 1703A-119, can change over time, and is specific to each cooperative. That leaves all other outages included in the All Other cause. All Other and Major Events are segregated to better reveal trends in daily operation in the All Other cause category that would be hidden by the large statistical effect of Major Events.

*Projected System Growth*

Garkane Electric provided the following projections for peak demand growth for their Arizona system over the next five year period. The projections were based on assumptions and methodologies that include both historical data and projections for the economy over the next few years.

| <u>Year</u> | <u>System Peak</u> | <u>Percent Growth</u> |
|-------------|--------------------|-----------------------|
| 2015        | 11.206 MW*         | 0.8%                  |
| 2016        | 11.77 MW           | 5.0%                  |
| 2017        | 12.35 MW           | 5.0%                  |
| 2018        | 12.97 MW           | 5.0%                  |
| 2019        | 13.62 MW           | 5.0%                  |

\*Actual peak

The average annual growth is projected by Garkane to be approximately five percent per year over the next five year period which is consistent with growth on the system over the past six years and projected economic conditions for the area. Future load for the Cooperative is heavily dependent on the growth of Colorado City, which is where most growth has occurred over the past five years. Based on discussions with GEC personnel about expectations for the Twin Cities area, the projected load growth seems reasonable.

## CONCLUSIONS

Based on its review of Garkane's Application, inspection of the Cooperative's electric system, discussions with the Cooperative's General Manager Dan McClendon and Chief Engineer Mike Avant, and responses to data requests, Staff's conclusions are as follows:

- a. Garkane is operating and maintaining its electrical system properly,
- b. Garkane is carrying out system improvements, upgrades and new additions to meet the current and projected load of the Cooperative in an efficient and reliable manner. These improvements, system upgrades and new construction are reasonable and appropriate. The Cooperative's plant in service for the Arizona service territory is "used and useful."
- c. The Cooperative has an acceptable level of system losses, consistent with the industry guidelines, and
- d. GEC has a satisfactory record of service interruptions in the historic period from 2010 thru 2014, reflecting satisfactory quality of service.

**BEFORE THE ARIZONA CORPORATION COMMISSION**

SUSAN BITTER SMITH  
Chairman  
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Commissioner  
TOM FORESE  
Commissioner

IN THE MATTER OF THE APPLICATION OF )  
GARKANE ENERGY COOPERATIVE, INC. )  
FOR A DETERMINATION OF THE FAIR )  
VALUE OF ITS PROPERTY FOR RATE )  
MAKING PURPOSES, TO FIX A JUST AND )  
REASONABLE RETURN THEREON, AND )  
TO APPROVE RATES DESIGNED TO )  
DEVELOP SUCH RETURN AND REQUEST )  
FOR WAIVER )  
\_\_\_\_\_)

DOCKET NO. E-01891A-15-0176

DIRECT  
TESTIMONY  
OF  
DARRON CARLSON  
PUBLIC UTILITIES ANALYST MANAGER  
UTILITIES DIVISION  
ARIZONA CORPORATION COMMISSION

DECEMBER 21, 2015

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**EXECUTIVE SUMMARY  
GARKANE ENERGY COOPERATIVE, INC.  
DOCKET NO. E-01891A-15-0176**

Garkane Energy Cooperative, Inc. ("Garkane" or "Cooperative") is a non-profit rural electric cooperative located in Loa, Utah. The Cooperative provides electric service to a total of 12,844 consumers, 11,405 in Utah and 1,439 in Arizona.

On June 1, 2015, Garkane filed an application for a permanent rate increase. Garkane requested a total Cooperative revenue requirement of \$24,402,577 which results in a net margin of \$2,669,802.

Staff recommends a total Cooperative revenue requirement of \$22,671,026 which results in a net margin of \$1,464,850.

**STAFF RECOMMENDS:**

Approval of its recommended revenue requirement.

1 **INTRODUCTION**

2 **Q. Please state your name and business address.**

3 A. My name is Darron Carlson. My business address is 1200 West Washington Street, Phoenix,  
4 Arizona 85007.

5  
6 **Q. By whom are you employed and in what capacity?**

7 A. I am employed by the Utilities Division ("Staff") of the Arizona Corporation Commission  
8 ("ACC" or "Commission") as a Public Utilities Analyst Manager.

9  
10 **Q. How long have you been employed with the Utilities Division?**

11 A. I have been employed by the Utilities Division since September of 1991.

12  
13 **Q. Please describe your educational background and professional experience.**

14 A. I hold a Bachelor of Arts degree in both Accounting and Business Management from  
15 Northeastern Illinois University in Chicago, Illinois.

16  
17 I have participated in quite a number of seminars and workshops related to utility rate-  
18 making, cost of capital, income taxes, and similar issues. These have been sponsored by  
19 organizations such as the National Association of Regulatory Utility Commissioners  
20 ("NARUC"), Duke University, Florida State University, Michigan State University, New  
21 Mexico State University, and various other organizations.

22  
23 **Q. Briefly describe your responsibilities as a Public Utilities Analyst Manager.**

24 A. In my capacity as a Public Utilities Analyst Manager, I supervise analysts who examine, verify,  
25 and analyze utilities' statistical, financial, and other information. These analysts write reports  
26 and/or testimonies analyzing proposed mergers, acquisitions, asset sales, financings, rate

1 cases, and other matters in which they make recommendations to the Commission. I provide  
2 support and guidance along with reviewing and editing the work products. I also perform  
3 analysis as needed on special projects. Additionally, I provide expert testimony at formal  
4 hearings. Finally, I assist Staff members during formal hearings and supervise responsive  
5 testimonies, as needed, during the hearing process.

6  
7 **PURPOSE OF TESTIMONY**

8 **Q. What is the scope of your testimony in this case?**

9 A. I am presenting Staff's analysis and recommendation in the limited area of the revenue  
10 requirement for this rate application.

11  
12 **Q. Who else is providing Staff testimony and what areas/issues will they address?**

13 A. Staff witness Phan Tsan is presenting Staff's recommendations regarding rate base and  
14 operating revenues and expenses. Staff witness Eric Hill is presenting Staff's  
15 recommendations regarding the base cost of purchased power and Garkane Energy  
16 Cooperative, Inc.'s ("Garkane" or "Cooperative") purchased power adjustor mechanism, in  
17 this round of testimony. Staff witness Margaret Little is presenting Staff's recommendations  
18 regarding the engineering analysis in this round of testimony.

19  
20 **REVENUE REQUIREMENT**

21 **Q. What does the Cooperative request for its revenue requirement?**

22 A. The Cooperative is requesting a \$799,289 or 3.39 percent increase over the test year revenue  
23 of \$23,603,288 to \$24,402,577.

24

1 **Q. What is Staff's recommendation for the Cooperative's revenue requirement?**

2 A. Staff is recommending a \$932,262, or 3.95 percent decrease over the test year revenue of  
3 \$23,603,288 to \$22,671,026. See Schedule DWC-1.

4  
5 **Q. How do the above revenue requirements translate to the bottom line for the  
6 Cooperative?**

7 A. The Cooperative's requested revenue requirement of \$24,402,577 results in a net margin of  
8 \$2,669,802 and a 2.42 debt service coverage ("DSC") ratio. Staff's recommended revenue  
9 requirement results in a net margin of \$1,464,850 and a 2.00 DSC ratio. See Schedule DWC-  
10 2.

11  
12 **Q. What is the reason for the difference between the aforementioned revenue  
13 requirements?**

14 A. The Cooperative chose to include in its revenue requirement the funding for fifty percent of  
15 its capital expenditures projected for 2014 through 2018. Note that the test year is calendar  
16 year 2013. The Cooperative indicates that it wishes to maintain its current capital structure  
17 which reflects fifty percent equity.

18  
19 While Staff agrees that a fifty percent equity position for the Cooperative is a good thing,  
20 Staff does not agree that it is appropriate to fund future capital expenditures directly through  
21 the revenue requirement. Building and maintaining the equity position is important and the  
22 Cooperative has done this without direct funding of capital expenditures.

23  
24 **Q. How did Staff determine its recommended revenue requirement?**

25 A. Typically, cooperatives and Staff utilize the DSC ratio to derive the revenue requirement for  
26 cooperatives. That is exactly what Staff has done in this case. Staff determined that a 2.00

1 DSC ratio provides all the funding needed for operations, contingencies, and reasonable plant  
2 investments. Staff believes that this level of funding will allow Garkane to operate and  
3 maintain its current level of equity.  
4

5 **Q. Why does Staff object to Garkane's inclusion of fifty percent of its annual capital**  
6 **expenditures as direct considerations in defining the level of rate increase it is**  
7 **requesting?**

8 A. While Staff recognized that Cooperatives rely upon the reinvestment of earnings to fund  
9 capital expenditures this is more properly achieved through the establishment of reasonable  
10 DSC and TIER ratios, using such ratios to drive the required revenue requirement instead of  
11 setting revenue requirement to specifically fund some level of capital expenditures. Directly  
12 funding a set percent of capital expenditures and then requiring ratepayers to fund 100  
13 percent of these capital expenditures again through the recognition of depreciation expense  
14 causes ratepayers to pay more for the same capital expenditures. Further, requiring the direct,  
15 up-front funding of 50 percent of capital investments which are designed to provide service  
16 to generations of customers for perhaps as long as 50 years is clearly unfair to current  
17 customers.  
18

19 Further, Staff believes that approval of the Cooperative's requested revenue requirement will  
20 result in intergenerational cost recovery issues. Current ratepayers should not be expected to  
21 fund capital expenditures for future customers.  
22

### 23 **RECOMMENDATION**

24 **Q. Based on the above, what is Staff recommending?**

25 A. Staff recommends approval of its recommended total Cooperative revenue requirement in  
26 the amount of \$22,671,026.

1 **Q. Does this conclude your direct testimony?**

2 **A. Yes, it does.**

REVENUE REQUIREMENT

| LINE<br>NO. DESCRIPTION  | (A)                       |              | (B)           |              | (C)                 |              | (D)           |              |
|--|---------------------------|--------------|---------------|--------------|---------------------|--------------|---------------|--------------|
|  | COOPERATIVE ORIGINAL COST |              |               |              | STAFF ORIGINAL COST |              |               |              |
|  | Total System              | Arizona      | Total System  | Arizona      | Total System        | Arizona      | Total System  | Arizona      |
| 1 Adjusted Rate Base   | \$ 60,782,310             | \$ 9,651,807 | \$ 60,782,310 | \$ 9,651,807 | \$ 60,782,310       | \$ 9,651,807 | \$ 60,782,310 | \$ 9,651,807 |
| 2 Adjusted Operating Margins (Loss) Before Interest on L.T. Debt | \$ 2,633,727              | \$ 830,262   | \$ 3,160,327  | \$ 1,248,381 | \$ 3,160,327        | \$ 1,248,381 | \$ 3,160,327  | \$ 1,248,381 |
| 3 Current Rate of Return (L2 / L1)                               | 4.33%                     | 8.60%        | 5.20%         | 12.93%       | 5.20%               | 12.93%       | 5.20%         | 12.93%       |
| 4 Proposed Operating Margins Before Interest on L.T. Debt        | \$ 3,433,016              | \$ 678,134   | \$ 2,228,065  | \$ 1,072,806 | \$ 2,228,065        | \$ 1,072,806 | \$ 2,228,065  | \$ 1,072,806 |
| 5 Proposed Rate of Return (L4 / L1)                              | 5.65%                     | 7.03%        | 3.67%         | 11.12%       | 3.67%               | 11.12%       | 3.67%         | 11.12%       |
| 6 Operating Income Deficiency (L4 - L2)                          | \$ 799,289                | \$ (152,128) | \$ (932,262)  | \$ (175,576) | \$ (932,262)        | \$ (175,576) | \$ (932,262)  | \$ (175,576) |
| 7 Gross Revenue Conversion Factor                                | 1.0000                    | 1.0000       | 1.0000        | 1.0000       | 1.0000              | 1.0000       | 1.0000        | 1.0000       |
| 8 Required Revenue Increase (L7 * L6)                            | \$ 799,289                | \$ (152,128) | \$ (932,262)  | \$ (175,576) | \$ (932,262)        | \$ (175,576) | \$ (932,262)  | \$ (175,576) |
| 9 Adjusted Test Year Revenue                                     | \$ 23,603,288             | \$ 4,561,895 | \$ 23,603,288 | \$ 4,561,895 | \$ 23,603,288       | \$ 4,561,895 | \$ 23,603,288 | \$ 4,561,895 |
| 10 Proposed Annual Revenue (L8 + L9)                             | \$ 24,402,577             | \$ 4,409,767 | \$ 22,671,026 | \$ 4,386,319 | \$ 22,671,026       | \$ 4,386,319 | \$ 22,671,026 | \$ 4,386,319 |
| 11 Required Increase in Revenue (%)                              | 3.39%                     | -3.33%       | -3.95%        | -3.85%       | -3.95%              | -3.85%       | -3.95%        | -3.85%       |
| 12 Interest Expense on Long-term Debt                            | \$ 1,442,214              | \$ 231,623   | \$ 1,442,214  | \$ 231,623   | \$ 1,442,214        | \$ 231,623   | \$ 1,442,214  | \$ 231,623   |
| 13 Proposed/Recommended TIER                                     | 2.85                      |              | 2.02          |              | 2.02                |              | 2.02          |              |
| 14 Proposed/ Recommended DSC                                     | 2.42                      |              | 2.00          |              | 2.00                |              | 2.00          |              |

References:

Columns A : Company Schedule A-2.0, B-2.0

Columns B : Company Schedule A-1.0, G-1.1 & G-2.1

Column D: Staff Schedules PNT-2, PNT-4, Testimony

|                           |
|---------------------------|
| <b>FINANCIAL ANALYSIS</b> |
|---------------------------|

|    |  | [A]                                       | [B]  |
|----|--|---|--|
|    |  | <i>Total<br/>Cooperative<br/>Proposed</i> | <i>Total Cooperative<br/>Staff<br/>Recommended</i> |
|    |  | <u>TOTAL</u>                              | <u>TOTAL</u>                                       |
| 1  | Net Margins  | \$ 2,669,802                              | \$ 1,464,850                                       |
| 2  | Depreciation & Amort.                                | 2,871,262                                 | 2,871,262  |
| 3  | Income Tax Expense                                   | -   | -  |
| 4  |  |   |  |
| 5  | Interest Expense on L.T.D                            | \$ 1,442,214                              | \$ 1,442,214                                       |
| 6  | Repayment of Principal                               | 1,446,949                                 | 1,446,949  |
| 7  | <b>TIER</b>  |   |  |
| 8  | [1+3] ÷ [5]  | 2.85                                      | 2.02   |
| 9  | <b>DSC</b>   |   |  |
| 10 | [1+2+3+5] ÷ [5+6]                                    | 2.42                                      | 2.00   |
| 13 |  |   |  |
| 14 |  |   |  |
| 15 |  |   |  |
| 16 |  |   |  |
| 17 | <u>References:</u>                                   |   |  |
| 18 | Column A: Cooperative Schedules A-2                  |   |  |
| 19 | Column B: Staff Schedule PNT-3 and Staff's Testimony |   |  |

BEFORE THE ARIZONA CORPORATION COMMISSION

SUSAN BITTER SMITH

Chairman

BOB STUMP

Commissioner

BOB BURNS

Commissioner

DOUG LITTLE

Commissioner

TOM FORESE

Commissioner

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DOCKET NO. E-01891A-15-0176

DIRECT

TESTIMONY

OF

ERIC A. HILL

EXECUTIVE CONSULTANT

UTILITIES DIVISION

ARIZONA CORPORATION COMMISSION

DECEMBER 21, 2015

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**EXECUTIVE SUMMARY  
GARKANE ENERGY COOPERATIVE, INC.  
DOCKET NO. E-01891A-15-0176**

Staff's testimony concerns Garkane Electric Cooperative, Inc ("Garkane" or "Cooperative") with respect to its base cost of power and its wholesale power cost adjustment mechanism.

Staff recommends a base cost of power of \$0.035346 per kWh, which reflects the test year cost of power and kWh usage. This recommendation differs from the base cost of power proposed by the Cooperative in its application, as it does not include power generation expenses. Staff recommends that those power generation expenses be recovered in base rates, rather than in a variable adjustor mechanism. Staff also recommends the addition of a plan of administration for Garkane's existing wholesale power cost adjustment mechanism.

1 **INTRODUCTION**

2 **Q. Please state your name, occupation, and business address.**

3 A. My name is Eric Hill. I am an Executive Consultant employed by the Arizona Corporation  
4 Commission ("ACC" or "Commission") in the Utilities Division ("Staff"). My business  
5 address is 1200 West Washington Street, Phoenix, Arizona 85007.

6  
7 **Q. Briefly describe your responsibilities as an Executive Consultant.**

8 A. In my capacity as an Executive Consultant, I review and analyze applications filed with the  
9 Commission and prepare memoranda and proposed orders for Open Meetings. This  
10 includes evaluation of environmental compliance adjustment mechanisms, renewable energy  
11 plans, energy efficiency plans, and decoupling mechanisms. My duties also include preparing  
12 written testimony in rate cases, and testifying in related hearings. I have also been involved in  
13 the rulemaking process for statewide interconnection rules.

14  
15 **Q. Please describe your educational background and professional experience.**

16 A. I received a Bachelor of Science degree in Business Administration from the University of  
17 Utah in 2006, and I graduated from the University of Tulsa College of Law in 2010. I was a  
18 senior staff member of the *Energy Law Journal* while I was in law school and I am a licensed  
19 attorney in the state of Arizona. Prior to joining the Arizona Corporation Commission in  
20 2013, I was employed by Bonneville Power Administration as a Public Utilities Specialist,  
21 where I was responsible for compliance duties pertaining to federal energy efficiency  
22 contracts with utilities throughout the Pacific Northwest.

23  
24 **Q. What is the scope of your testimony in this case?**

25 A. My testimony will address Garkane Energy Cooperative, Inc.'s ("Garkane" or "Cooperative")  
26 base cost of power within the wholesale power cost adjustment mechanism ("WPCA").

1     **BASE COST OF POWER**

2     **Q.     What is the base cost of power proposed by Garkane?**

3     A.     Garkane has proposed a base cost of power of \$0.037493 per kWh. This figure was  
4           calculated based on purchased power costs of \$9,313,048 and kWh sales of 248,393,466 for  
5           both Arizona and Utah.

6  
7     **Q.     What base cost of power does Staff recommend for Garkane?**

8     A.     Staff has recommended a base cost of power of \$0.035346 per kWh, which is also based on  
9           kWh sales of 248,393,466 in Arizona and Utah.

10

11    **Q.     Why has Staff recommended a different base cost of power?**

12    A.     Staff has made this recommendation because Garkane included power generation expenses of  
13           \$533,418 in its proposed base cost of power, and while Staff agrees that such expenses are  
14           recoverable, the WPCA is not the appropriate method for such recovery. Staff recommends  
15           that power generation expenses be included in Garkane's base rates.

16

17    **Q.     Why is the WPCA inappropriate for recovery of power generation expenses?**

18    A.     As discussed in more detail below, the WPCA is intended to recover power generation costs  
19           that are variable in nature. The power generation costs included in Garkane's application are  
20           primarily maintenance expenses related to its hydro unit, which is why those costs should be  
21           recovered in base rates.

22

23    **ADJUSTMENT MECHANISM**

24    **Q.     What is the purpose of a purchased power adjustment mechanism?**

25    A.     An adjustor mechanism is generally designed to recover the variable cost of purchased power  
26           and to adjust for changes in that cost between rate cases.

1 **Q. Does Staff recommend that Garkane use an adjustment mechanism for its Arizona**  
2 **customers?**

3 A. Yes. The current adjustment mechanism allows Garkane to limit its under-collections or  
4 over-collections and adjust its level of recovery for purchased power costs between rate cases.

5

6 **Q. How long has Garkane's existing adjustment mechanism been in place?**

7 A. Garkane's WPCA was approved by the Arizona Corporation Commission in Decision No.  
8 50266 on September 18, 1979.

9

10 **Q. Does the existing adjustment mechanism treat the Arizona and Utah service areas as**  
11 **a single unit?**

12 A. No. There is only an adjustor for Arizona customers.

13

14 **Q. Why should an adjustment mechanism apply only in Arizona?**

15 A. Garkane has the ability to make rate changes more quickly in Utah.

16

17 **PLAN OF ADMINISTRATION**

18 **Q. Should the Cooperative file a Plan of Administration for its adjustment mechanism?**

19 A. Yes. Garkane should file a proposed Plan of Administration ("POA") for its WPCA in this  
20 docket. The POA should include a clear and detailed description of how its adjustor  
21 functions and the allowable expenses that are included. The draft POA should be included in  
22 Garkane's rebuttal testimony.

23

24 **SUMMARY OF RECOMMENDATIONS**

25 **Q. Please provide a brief summary of your recommendations.**

26 A. 1. Staff recommends a base cost of power of \$0.035346 per kWh.

1  
2  
3  
4  
5

2. Staff recommends power generation expenses be recovered in base rates.

3. Staff recommends Garkane file a draft POA for its WPCA in its rebuttal testimony.

**Q. Does this conclude your direct testimony?**

A. Yes, it does.