

**ORIGINAL**



BEFORE THE ARIZONA CORPORATION COMMISSION  
Arizona Corporation Commission

- 2 **COMMISSIONERS**
- 3 BOB STUMP - Chairman
- 4 GARY PIERCE
- 5 BRENDA BURNS
- 6 BOB BURNS
- 7 SUSAN BITTER SMITH

**DOCKETED**

APR - 4 2013

DOCKETED BY	<i>[Signature]</i>
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6 IN THE MATTER OF THE APPLICATION OF  
 7 SOUTHWEST TRANSMISSION COOPERATIVE,  
 8 INC. FOR A HEARING TO DETERMINE THE  
 9 FAIR VALUE OF ITS PROPERTY FOR  
 10 RATEMAKING PURPOSES, TO FIX A JUST AND  
 11 REASONABLE RETURN THEREON AND TO  
 12 APPROVE RATES DESIGNED TO DEVELOP  
 13 SUCH RETURN.

DOCKET NO. E-04100A-12-0353

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

11 The Utilities Division ("Staff") of the Arizona Corporation Commission ("Commission")  
 12 hereby files the Direct Testimony of Staff witnesses Randall Vickroy, Dennis M. Kalbarczyk and  
 13 Richard Mazzini in the above-referenced matter.

RESPECTFULLY SUBMITTED this 4<sup>th</sup> day of April, 2013.

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1 Copies of the foregoing were mailed  
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BEFORE THE ARIZONA CORPORATION COMMISSION

BOB STUMP  
Chairman  
GARY PIERCE  
Commissioner  
BRENDA BURNS  
Commissioner  
BOB BURNS  
Commissioner  
SUSAN BITTER SMITH  
Commissioner

IN THE MATTER OF THE APPLICATION OF ) DOCKET NO. E-04100A-12-0353  
THE SOUTHWEST TRANSMISSION )  
COOPERATIVE, INC. FOR A HEARING TO )  
DETERMINE 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 )  
\_\_\_\_\_ )

DIRECT  
TESTIMONY  
(COST OF CAPITAL)  
OF  
RANDALL VICKROY  
(CONSULTANT)  
ON BEHALF OF THE STAFF OF THE  
UTILITIES DIVISION  
ARIZONA CORPORATION COMMISSION

APRIL 4, 2013

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1 **Introduction**

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

3 A. My name is Randall Vickroy . I am a senior consultant for The Liberty Consulting Group  
4 (“Liberty”). My Liberty business address is: The Liberty Consulting Group, 65 Main  
5 Street, P.O. Box 1237, Quentin, Pennsylvania 17083.  
6

7 **Q. HAVE YOU PREPARED SUMMARIES OF YOUR BACKGROUND AND**  
8 **QUALIFICATIONS?**

9 A. Yes, they are provided in Exhibit REV-1.  
10

11 **Q. MR. VICKROY, PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND**  
12 **AND PROFESSIONAL EXPERIENCE AS THEY RELATE TO THE SUBJECTS**  
13 **OF THIS TESTIMONY.**

14 A. I spent 12 years with a major Mountain States electric and gas utility, starting as a  
15 financial analyst in the corporate finance and planning department, and then became  
16 financial supervisor, director of analysis, business development manager, and assistant to  
17 the chief financial officer. My responsibilities included financial planning, capital  
18 acquisition, capital spending analysis and allocation, treasury operations, securitization  
19 financing, project financing, mergers and acquisitions, cash management, and investor  
20 relations.  
21

22 I have been consulting since 1991 on corporate finance and business issues in the  
23 electricity, natural gas, and telecommunications industries. During this time, I have  
24 provided consulting services to public utility commissions and to companies in over 25  
25 states and in three foreign countries. I received a Bachelor of Arts from Monmouth

1 College with a major in business administration and a Masters of Business  
2 Administration degree from the University of Denver with an emphasis in finance.

3  
4 **Q. For whom are you appearing in this proceeding?**

5 A. I am appearing on behalf of the Staff of the Arizona Corporation Commission ("Staff").  
6

7 **Q. What is the purpose of your testimony?**

8 A. My testimony provides a review, evaluation, and recommendations regarding cost-of-  
9 capital issues for the Southwest Transmission Cooperative, Inc. ("SWTC") rate filing, as  
10 summarized in the company's Schedules A-1 and A-2. Cost-of-capital issues include the  
11 cost of debt, mortgage coverage ratios, such as Times Interest Earned Ratio ("TIER") and  
12 Debt Service Coverage ("DSC"), equity ratios, and cash flow indicators used by credit  
13 rating agencies to evaluate risk. I also discuss my evaluation of whether SWTC's cost-  
14 of-capital request provides adequate margins and debt coverage to finance its investment  
15 in its rate base for the test period ended December 31, 2011, as adjusted.  
16

17 **Q. Why has SWTC requested a rate decrease in this filing?**

18 A. The primary reason for the SWTC rate filing is to provide for the shifting of the costs of  
19 reserve sharing obligations with the Southwest Reserve Sharing Group ("SRSG") from  
20 SWTC to Arizona Electric Power Cooperative, Inc. ("AEPCO"). This change occurs  
21 through new transmission contracts. SWTC will use the additional revenue from these  
22 contracts, staffing cost reductions, and lower depreciation rates to reduce its revenue  
23 requirement and rates. SWTC's transmission rates are the highest in the region;  
24 therefore, this reduction will help the SWTC become more price competitive in both its  
25 network and point-to-point transmission rates.

1 SWTC has also stated in its testimony that the Rural Utilities Service (“RUS”) requires it  
2 periodically to update its depreciation rates, and that Arizona Corporation Commission  
3 (“ACC”) rules require a rate case before implementation of any changes. SWTC hired  
4 Burns and McDonnell to perform a depreciation study presented along with the testimony  
5 of Mr. Peter Scott. The study recommends a decrease in depreciation rates, which SWTC  
6 has also factored into its net rate decrease request of \$12.8 million.

7  
8 **Q. How do new transmission contracts affect SWTC’s revenue requirements?**

9 A. AEPCO and SWTC have arranged to enter into a 205 MW point-to-point transmission  
10 contract to provide wheeling necessary to meet AEPCO’s reserve sharing obligations  
11 with SRSG. This new contract will increase SWTC’s revenue and net margins by about  
12 \$9.5 million annually. AEPCO and SWTC also signed a 110 MW point-to-point  
13 transmission service contract on January 1, 2012. This agreement provides the wheeling  
14 paths necessary to accommodate an N-1 event on the SWTC transmission system. The  
15 110 MW N-1 contract replaces a 48 MW contract previously in place. It represents about  
16 70 MW in additional N-1 event protection requirements that are required, according to  
17 SWTC. The second contract would add an additional \$925,000 of increased wheeling  
18 revenue not reflected in 2011 test period revenues. These two new transmission contracts  
19 with AEPCO increase SWTC revenue by about \$10.4 million per year. They comprise  
20 the primary driver of the \$12.8 million revenue decrease request.

21  
22 **Q. What other significant adjustments to the test period has SWTC made?**

23 A. SWTC has made an adjustment of about \$1.65 million, in order to reflect a 2011 decrease  
24 in staffing levels and pay rates. Second, the new depreciation study noted earlier  
25 recommended a change in depreciation rates. That change would reduce annual  
26 depreciation expense by about \$1.35 million.

1 SWTC also recently lost a 40 MW point-to-point transmission contract with its partial  
2 requirements member Sulphur Springs Valley Electric Cooperative, Inc. ("SSVEC"),  
3 which has the contractual right as a partial requirements customer to shop for its own  
4 transmission above the level allocated to it in the 2001 restructuring. The loss of the  
5 SSVEC contract increases the SWTC revenue requirement by about \$1.35 million per  
6 year. Including other smaller adjustments, the net SWTC adjustments to the 2011 test  
7 period are about \$11.5 million.

8  
9 **Q. What other reasons has SWTC cited in support of the proposed rate decrease?**

10 A. SWTC's current wholesale transmission rates are high in comparison to other  
11 transmission providers in the region. Both the network and the point-to-point  
12 transmission rates lie well above those of Arizona Public Service, Salt River Project,  
13 Tucson Electric Power, and Western Area Power Administration ("WAPA"). The fact  
14 that SWTC network rates are high threatens the loss of partial requirements contracts,  
15 such as the SSVEC 40 MW contract, when customers have the option to shop the market.  
16 SWTC believes that point-to-point rates will become more competitive with the rate  
17 decrease, though they will still be higher than other regional rates.

18  
19 SWTC has also earned high net margins and coverage ratios in 2011 and in 2012. These  
20 ratios well exceed the target levels from the previous rate case, which went into effect in  
21 2011. The cooperative would like to reduce its margin levels to be more in line with that  
22 of the targeted DSC from the previous rate case.

1 **SWTC Financial Results**

2 **Q. What financial results has SWTC achieved over the past five years?**

3 A. The DSC, TIER, and equity as a percent of total capitalization comprise primary financial  
4 ratios and indicators of SWTC financial health. The cooperative's RUS mortgage  
5 agreement debt covenants require a DSC of 1.0 times and a TIER of 1.05 times in two of  
6 three consecutive years. Exhibit REV-2 provides the company's DSC, TIER, and equity  
7 ratio for each year from 2008 through 2012. The 2012 results rely on preliminary,  
8 unaudited information. We consider the DSC to be more significant than the TIER. The  
9 DSC takes into account cash flow items, such as depreciation and principal payments. It  
10 provides a better indicator of whether an enterprise is generating sufficient cash to meet  
11 debt and principal requirements. The exhibit shows that SWTC generated DSC ratios of  
12 only between 1.05 and 1.10 times in each of the calendar years 2008 through 2010, but  
13 improved greatly in 2011 and 2012.

14  
15 **Q. Please summarize SWTC's actual results for the test period, and as adjusted for the  
16 new transmission contracts with AEPCO and other adjustments proposed.**

17 A. SWTC's Schedule A-2 reports actual net margins for the test year ended December 31,  
18 2011 of about \$5.7 million. The test year DSC was 1.62 and the TIER was 2.06 times.  
19 Equity as a percentage of total capitalization increased from 7.15 percent to 11.38 percent  
20 during 2011. SWTC's financial results were strong in 2011, which is the first year that  
21 rates from the previous rate case became effective.

22  
23 SWTC's adjustments of \$10.4 million for AEPCO transmission contracts after the test  
24 period and several smaller adjustments to operating expenses would increase adjusted net  
25 margin to about \$17.1 million, as estimated by SWTC. The DSC would be 2.63 times

1 and the TIER would be 4.42 times. These levels are far above those of the previous rate  
2 case or SWTC's requested level of margins consistent with a 1.35 DSC.

3  
4 SWTC seeks through its proposed \$12.8 million rate decrease to offset increased revenue  
5 from the AEPCO point-to-point contracts, thereby lowering margins and coverage to  
6 levels consistent with a 1.35 DSC.

7  
8 **Q. What were SWTC's actual unaudited financial results in 2012?**

9 A. SWTC's unaudited financial results for 2012 were even higher than levels that were  
10 experienced in 2011. Net margins increased to \$7.7 million, DSC was 1.90 times, and  
11 the TIER was 2.57 times. Equity as a percentage of capitalization increased from 11.38  
12 percent at year-end 2011 to 18.45 percent according to preliminary, unaudited results at  
13 December 31, 2012.

14  
15 **SWTC Cost of Debt**

16 **Q. Please summarize SWTC's calculations of its cost of debt.**

17 A. SWTC Schedules D-1 and D-2 report interest for the test year ended December 31, 2011  
18 of \$5,320,328 on debt outstanding of \$116.6 million, at a cost rate of 4.56 percent. Long-  
19 term debt expense arises primarily from interest on the company's Federal Financing  
20 Bank ("FFB") debt. This debt consists of numerous notes, which account for about \$96.9  
21 million of long-term debt outstanding. SWTC also had long-term debt outstanding at  
22 December 31, 2011 with Central Bank for Cooperatives of \$7.3 million, National Rural  
23 Utilities Cooperative Finance Corporation ("CFC") Series 1994A bonds of \$6.5 million,  
24 and additional CFC debt of \$5.9 million. SWTC projects that long-term debt would  
25 decrease slightly in 2012 to \$116.3 million, and that the debt cost rate would decrease to  
26 4.29 percent. Annual interest cost would be lowered to \$4.99 million. The SWTC filing

1 indicated that it expects to pay off the Central Bank of Cooperatives debt after the test  
2 period. This debt carried an interest rate of 7.74 percent. SWTC would replace it with  
3 FFB or CFC debt carrying a lower interest rate. SWTC annualized the effect of this  
4 refinancing in adjustments to the cost of debt. SWTC actually did refinance this debt in  
5 February 2012 with 3.58 percent CFC debt.

6  
7 **Q. Does SWTC include short-term debt in its proposed capital structure?**

8 A. No. SWTC did not have short-term debt outstanding at December 31, 2011 and did not  
9 project short-term debt at the end of 2012.

10  
11 **Q. What do you conclude regarding the company's requested cost of debt as presented  
12 in Schedules D-1 and D-2?**

13 A. Since year-end 2012 information is now available, SWTC should use updated cost of  
14 long-term and short-term debt information as of December 31, 2012, to calculate the cost  
15 of debt. Based on its projections, the cost of debt should become substantially lower after  
16 updating the cost of debt information.

17  
18 **Financial Comparisons**

19 **Q. What debt coverage and equity ratios typically apply for transmission companies  
20 that are comparable to SWTC?**

21 A. The CFC prepares operating and financial statistics for Generation and Transmission  
22 ("G&T") cooperatives on an annual basis in its Key Performance Indicators ("KPI")  
23 document. The KPI provides data for several sub-categories of G&T businesses. The  
24 2012 report for 2007-2011 includes a category of 13 transmission companies. The KPI  
25 key financial indicators provide insight into the realized financial results and financial  
26 statistics for G&T transmission providers. The average credit rating from Moody's for

1 the 13 transmission companies is “A3”, which comprises the lowest of the three “A”  
2 rating categories. The financial results over the past three years for these enterprises can  
3 provide a general idea of the actual financial performance of transmission G&Ts that  
4 have attained this investment grade credit rating. We believe this rating is an appropriate  
5 goal for SWTC in targeting financial results.

6  
7 The 2012 KPI report shows realized DSC ratios for the transmission companies of 1.45,  
8 1.41 and 1.45 times in 2009 through 2011. The average for these three years is 1.44  
9 times. TIER ratios for the transmission group ranged from 2.22 to 2.61 times during  
10 these three years, averaging 2.42 times. Equity ratios as a percentage of capitalization for  
11 the transmission company category average 38.5 percent for the three-year period. That  
12 level is substantially higher than that of the overall G&T group.

13  
14 The KPI report also included results for financial metrics used by credit rating agencies to  
15 measure cash flow adequacy. G&T companies that have an “A” rating or higher  
16 experienced an average funds from operations to debt (“FFO/Debt”) ratio of 6.26 percent  
17 over the same three-year period. The funds from operations to interest (“FFO/Interest”)  
18 for the “A” rating or higher company group was 2.36 times over the three-year period.

19  
20 Credit rating agencies use the results of the past three years under these financial metrics  
21 as their quantitative evaluation of the financial results of G&T companies. The historical  
22 results of the transmission cooperatives, which carry an average A3 rating, and G&T  
23 cooperatives with an “A” rating or above gives a general idea of the types of financial  
24 metrics that are desirable for a strong transmission cooperative.

1 **Q. Do the credit rating agencies specify financial metric performance for transmission**  
2 **cooperatives to qualify for an “A” credit rating?**

3 A. They do not do so specifically for transmission-only enterprises. However, the credit  
4 rating criteria set forth for all G&T companies to evaluate credit risk is relevant. The  
5 Moody’s Investor Service rating methods are clearly stated in “U.S. Electric Generation  
6 and Transmission Cooperatives” dated December 2009. This document provides both  
7 quantitative and qualitative criteria for evaluating risk levels. We believe that these  
8 criteria are most important in evaluating risk for purposes of determining the cost of  
9 capital.

10  
11 Moody’s evaluative criteria include quantitative financial metrics, which are weighted at  
12 40 percent of the evaluation, and more qualitative criteria that account for 60 percent of  
13 the rating. While the Moody’s credit rating criteria are geared more toward the risks and  
14 business climate of generation or G&T cooperatives, rather than transmission-only  
15 enterprises, the principles can also be applied and are relevant for transmission providers  
16 as well.

17  
18 I focused on financial metric criteria consistent with attaining an “A” credit rating.  
19 SWTC’s very small size and the fact that it has not used capital markets previously mean  
20 that it would take a credit rating of at least this level to gain access to capital markets.  
21 SWTC needs to attain financial results that are consistent with a solid investment grade  
22 rating to gain access to capital markets if needed.

1 **Q. How does SWTC's financial performance over the past three years compare to**  
2 **Moody's ranges for an "A" credit rating?**

3 A. SWTC's average realized DSC ratio over the three-year period from 2010 through 2012  
4 was 1.52 times, and its realized TIER averaged 1.83 times. The Moody's ranges for  
5 these metrics were realized DSC ratio of between 1.2 and 1.4 times, and the same for the  
6 TIER ratio. SWTC's historical performance with regard to these two metrics is well  
7 above the Moody's ranges for an "A" rating, and indicates lower levels of risk. SWTC's  
8 equity to total capitalization ratios for 2010-2012 averaged 12.3 percent, well below  
9 Moody's "A" range of 20 to 35 percent, indicating that SWTC carries more risk by this  
10 measure.

11  
12 SWTC's historical performance for cash flow metrics also compares favorably to  
13 Moody's "A" criteria. SWTC's funds from operations to interest coverage averaged  
14 about 2.85 times over the three-year period, as compared to Moody's range of between  
15 2.0 and 2.5 times. Funds from operations to long-term debt averaged about 9.1 percent,  
16 as compared to Moody's range of between 6 percent and 10 percent. The Moody's target  
17 financial metrics to achieve a credit rating are for realized financial metrics, such as the  
18 KPI information. Moody's does not use "targeted" financial results, which may not be  
19 realized for a number of reasons. SWTC's financial performance under these metrics has  
20 been high during the last two years and well above target levels from rate proceedings.  
21 Four out of the five financial metrics are positive for SWTC and indicate lower levels of  
22 risk from quantitative historical results.

1 **Q. What is your evaluation of SWTC with regard to qualitative credit rating criteria to**  
2 **evaluate business risk?**

3 A. Four areas of qualitative evaluation comprise 60 percent of Moody's business risk  
4 evaluations. SWTC has higher risk with regard to the first qualitative rating  
5 considerations, including long-term wholesale power supply contracts and regulatory  
6 status. SWTC currently has long-term network contracts with its members for the  
7 "allocated capacity" of its assets from the 2001 restructuring. This factor would  
8 generally be positive. However, most of the network capacity is sold to three partial  
9 requirements members. The partial requirements members may shop for transmission  
10 capacity above their allocated capacity. That ability has recently resulted in SWTC's  
11 losing a 40 MW contract with SSVEC. However, SWTC has noted that it does not  
12 expect any additional contract losses in the future. With regard to point-to-point  
13 contracts, SWTC no longer has substantial sales with customers other than AEPCO. The  
14 large, new contracts with the affiliate have less risk. The contracts qualitative factor adds  
15 some business risk to SWTC above that of investment-grade criteria for this factor.

16  
17 SWTC is also rate-regulated by the ACC, which Moody's considers a negative factor for  
18 purposes of business risk and credit ratings. The combination of SWTC's wholesale  
19 contract status and regulatory status would place the cooperative below investment grade  
20 levels for these categories, which is a negative ratings factor.

21  
22 **Q. Please explain the rate flexibility/rate shock qualitative factors as they relate to**  
23 **SWTC.**

24 A. The rate flexibility/rate shock qualitative factors are somewhat conflicting, and indicate  
25 moderate levels of risk for SWTC. "New construction build exposure" is a lower risk  
26 area for SWTC. This factor is important because transmission cooperatives largely

1 finance new capital investment with debt, and rely upon rate increases to service the debt.  
2 SWTC has a relatively small construction program, and does not face major  
3 requirements, which distinguishes it from AEPCO. This is a relatively positive risk  
4 factor for SWTC.

5  
6 SWTC does have rate competitiveness issues. As noted previously, SWTC's  
7 transmission rates are well above those of other regional companies, which adversely  
8 affect the prospect for new business outside of AEPCO. However, almost all of SWTC's  
9 existing contracts are either of the "must take" variety or new contracts with AEPCO.  
10 Rate competitiveness, while a negative factor, is therefore not an overwhelming one.

11  
12 The potential for additional rate shock exposure for SWTC is low, given the small  
13 construction program. SWTC transmission rates are already high, and this rate decrease  
14 filing should help this situation.

15  
16 **Q. What is your evaluation of the other qualitative business risk factors?**

17 A. The risks of SWTC's contractual counterparties also should be considered, because the  
18 cooperative is closely tied to its customers through strong, long-term contracts. With  
19 regard to members, profile risk factors include system residential sales as a percentage of  
20 the total, which for SWTC's members is below the averages for G&Ts nationally,  
21 according to RUS Key Performance Indicator comparisons. This factor alone would  
22 seem to be negative for SWTC; however, the percentage of risky industrial revenue as  
23 compared to total electric revenue is relatively small. Overall, this business risk factor is  
24 neutral for SWTC. The equity capitalization of members is another risk measure. This  
25 factor is also measured by the RUS performance indicators and is below the averages for  
26 G&Ts nationally, indicating a relatively negative factor.

1 Finally, the size rating is a negative factor for SWTC, both with regard to sales volumes  
2 and net property plant and equipment. SWTC is small compared to other cooperative  
3 transmission companies by these measures and this represents a negative business risk  
4 factor for the cooperative.

5  
6 **Q. What is your overall evaluation of the non-financial business risk and rating**  
7 **factors?**

8 A. The non-financial rating factors discussed indicate that SWTC carries moderate-to-higher  
9 levels of risk due to several of the non-financial metric factors, which Moody's considers  
10 to carry a majority of the weighting (60 percent) in evaluating the overall risk of G&T  
11 companies.

12  
13 **Rate Sufficiency**

14 **Q. What are SWTC's expected financial results for adjusted test period after the**  
15 **proposed decrease?**

16 A. SWTC based its requested decrease upon producing the revenue necessary to achieve a  
17 DSC ratio of 1.35 times in the test year. The requested decrease would also result in a  
18 TIER ratio of about 1.88 times. The cooperative has calculated that these coverage ratios  
19 would provide net margins of about \$4.4 million per year, and would produce operating  
20 cash flow of about \$9.8 million with proposed rates. SWTC has estimated that the  
21 decreased rates would increase equity as a percentage of capitalization to 13.9 percent  
22 (from about 11 percent).

1 **Q. Are the adjusted test period net margin, coverages and cash flow produced by rates**  
2 **based on the company's proposed DSC and TIER ratios sufficient for SWTC?**

3 A. Recognizing the need to provide sufficient margins, coverage and cash generation as  
4 measured by the adjusted test period, I would consider SWTC's proposed DSC of 1.35 to  
5 be within a range of acceptable DSC levels. I would consider the top end of that range to  
6 be at 1.45 times, considering the business environment and risk profile of SWTC. I  
7 recommend that the DSC used to set SWTC rates should fall within a range from 1.30 to  
8 1.45 times, and I find SWTC's proposal 1.35 times acceptable for setting rates.

9  
10 **Q. Does this conclude your direct testimony?**

11 A. Yes, it does.

## **Randall E. Vickroy**

---

### **Areas of Specialization**

Mr. Vickroy has over 30 years of experience in the utility industry, including 20 years as a management consultant. He has managed and performed numerous high-level consulting assignments at companies and utility commissions in over 35 states. His areas of expertise include corporate finance and treasury, investment and liability management; capital markets and financing vehicles; utility industry restructuring; utility rates and pricing; holding company lines of business and utility insulation; strategy and planning issues; asset valuations and decision-making; energy supply procurement; energy supply economics; commodity risk management; capital and expense budgeting and forecasting; corporate resource allocation; and financial and economic analysis.

### **Relevant Experience**

#### *Management and Operations Audits*

Lead Consultant on financial management, strategic planning, capital and expense budgeting, electrical energy and capacity purchases and hedging on Liberty's management and operations audit of the electricity and natural gas businesses of Interstate Power and Light and Alliant Energy for the Iowa Utilities Board.

Lead Consultant on financial management, planning, capital and expense budgeting, electrical energy and capacity purchases and hedging on Liberty's management and operations audit of the electricity and natural gas businesses of Iberdrola SA/Iberdrola USA/NYSEG and RG&E for the New York Public Service Commission.

Lead Consultant on electrical energy and capacity purchases and sales, hedging policies and operations, and capital budgeting on Liberty's management and operations audit of the electricity, natural gas, and steam operations of Consolidated Edison for the New York Public Service Commission.

Lead Consultant for Liberty's audit of East Kentucky Power Cooperative, which included examinations of governance, planning, finance and budgeting. Liberty performed for the Kentucky Public Service Commission an examination of governance at the generation and transmission cooperative serving 16 distribution cooperatives across the state. This study came in the wake of significant financial difficulties and also assessed planning, budgeting, financial, and risk functions and activities.

Lead Consultant in Liberty's comprehensive analysis of the ratemaking implications of Commonwealth Edison's Chicago electric service outages for the Illinois Commerce Commission. Responsible for investigating and analyzing ComEd's capital budgeting, resource allocation, project management, expenditure levels and rate base impacts over 10 years for operations leading up to and in response to the outages.

Lead Consultant on capital expenditure and operating expense benchmarking, capital and expense budgeting, and financial projections included in the restructuring plan for Northwestern Energy – Montana. Liberty performed a management and operations review of the electric and natural gas businesses of Northwestern – Montana following the bankruptcy filing of the utility holding company.

Team leader for the review of the New York Power Authority's (NYPA) profitability, financial reporting, rate competitiveness, pricing policies, power plant economics and economic development programs in two separate management audits for the state of New York. NYPA is the largest generator and carrier of power in New York, providing over 25 percent of the electricity sold.

Led the review of finance, cash management, budgeting, and rates in a comprehensive management audit of Southern Connecticut Gas (SCG) for the Connecticut Department of Public Utility Control (DPUC). Responsibilities included operational audits of all finance, regulatory, pension and budgeting processes of SCG.

Led the review of the finance, cash management, budgets, pension, accounting and rate functions in a comprehensive management audit of Connecticut Natural Gas (CNG) for the Connecticut DPUC. Work also included a focus on the financial impacts of CNG's non-regulated businesses, which includes a large steam system in downtown Hartford.

Led the review of the finance, cash management, budgeting, pension, rates, and tax functions in a comprehensive management audit of Yankee Gas for the Connecticut DPUC. Evaluation included an in-depth analysis of the effectiveness of Yankee's capital and expense budgeting processes and the integration of market and competitive components into these processes.

Led the review of the finance, pension, regulatory and accounting functions in a management audit of United Cities Gas for the Tennessee Regulatory Authority. Responsibilities included a review of all financial functional areas, as well as a review of the impact of all affiliate transactions between the regulated and non-regulated businesses.

Consultant on Liberty's management audit of GTE South - Kentucky for the Kentucky Public Service Commission. Responsible for the analysis of the financial management of GTE as it relates to the operation of its GTE South subsidiary.

Lead Consultant in Liberty's management audit of Bell Atlantic - Pennsylvania and Bell Atlantic - District of Columbia for their respective commissions. Responsible for reviewing Bell Atlantic's capital structure, finance and controller functions, financial systems, and treasury operations.

*Energy Supply and Fuel*

Lead Consultant in examining purchased power, off-system sales and generation modeling in Liberty's project evaluating the fuel and power procurement and fuel recovery mechanisms of Arizona Public Service for the Arizona Corporation Commission. Responsibilities also included the preparation and submittal of testimony for the regulatory dockets on these issues.

Lead Consultant for Liberty's audit of Arizona Electric Power Cooperative for the Arizona Corporation Commission. Responsibilities included reviews of fuel procurement and management, bulk electricity purchases and sales, power plant management, operations and maintenance, energy clause design and operation, and other issues affecting the prudence, reasonableness, and accuracy of costs that pass through the fuel and energy clause.

Lead Consultant for an audit of Southwestern Public Service for the New Mexico Public Regulation Commission that included a management review of the prudence of SPS' transactions under the fuel clause and a review of purchased power and energy supply economics.

Lead Consultant for evaluating the fuel forecasting models and methods utilized by Nova Scotia Power Company in the development of a fuel adjustment clause mechanism for the company, working for the Nova Scotia Utility and Review Board (UARB). Assessed NSPI's simulated production dispatch model and several ancillary models that include the impact on fuel expense of hedging and ancillary fuel costs.

Lead Consultant for evaluating the electric supply of Mississippi Power for the Mississippi Public Service Commission. Responsible for assessing the Southern Company intercompany interchange agreement, related system operations, power pool purchases and sales and pricing/billing.

Lead Consultant for evaluating the electric supply of Entergy-Mississippi for the Mississippi PSC. Responsible for assessing the Entergy interchange agreements, power pool purchases, electric supply solicitation processes and analysis and pricing/billing.

Lead Consultant for an audit of the gas cost adjustment clauses of Questar for the Public Service Commission of Utah. Responsible for assessing all gas purchase contracts, purchases from affiliate production companies and the financial and credit effects of the gas purchase contracts.

Lead Consultant for evaluating the economic dispatch operations, electric purchases and sales, Independent Power Producer contracts and power imports of Nova Scotia Power Company in a rate case context, working for the Nova Scotia UARB.

Lead Consultant for an audit of the gas cost adjustment clause of CenterPoint Energy for the Minnesota Public Utilities Commission. Responsible for assessing all gas purchase contracts, unbilled revenue impacts and a financial restatement of gas costs by the company.

Prepared, filed and provided testimony regarding a large biomass purchased power agreement of Nova Scotia Power Company, working for the Nova Scotia UARB. Testimony included the evaluation of financial risks, credit rating impact, and contract terms as they would affect NSPI.

Provided in-depth analysis and direct counsel to Commissioners regarding proposals of merchant power companies to build 550 MW power plants and sell all electric output to Mid-American Energy, working for the Iowa Utilities Board. Evaluations included the assessment of financial risks, credit rating impact, economics versus company ownership and contract terms as they would affect Mid-American.

Led the consulting and monitoring of contracting for electric supply by Western Massachusetts Power following the sale of its generation assets under electric deregulation.

Project Leader for the evaluation of electric supply alternatives for Orlando Utilities. Responsible for evaluating electric generation economics, electric purchases and sales, independent power producer contracts, regional market opportunities and transmission paths available.

#### *Mergers and Acquisitions*

Lead Consultant for Liberty's audit for the Virginia State Corporation Staff of Potomac Edison's distribution system transfer to two cooperative systems. Liberty examined the public interest, financial, rates and energy supply questions associated with the transfer by Allegheny Energy's utility operating subsidiary (Potomac Electric) of all of its electricity distribution operations business and facilities in Virginia to two rural electric cooperatives.

Served as Liberty's lead consultant in evaluations and testimony regarding the acquisitions of TXU (Texas), UniSource (Arizona) and Portland General Electric (Oregon) by leveraged buyout entities. Responsible for assessments of utility financial insulation and ring fencing, holding company leverage levels and credit rating impacts, governance, service reliability, access to information, and community presence issues.

Lead Consultant for the New Hampshire Public Utilities Commission in the evaluation and negotiation of approval terms for the spin-off and merger of Verizon's New England wireline businesses with FairPoint Communications. Responsible for the review and evaluation of the merger transaction, the financial viability of the merged entity, financial forecasts, credit ratings, access to capital, debt covenant approval and tax implications.

Lead Consultant for financial issues in a focused review of the Exelon/PSEG merger for the New Jersey Board of Public Utilities (BPU). Responsible for defining and evaluating the financing, credit rating, liquidity facility, and market risk exposures of PSE&G's utility operations to risks of Exelon's nuclear generating business.

*Rates and Regulatory*

Lead Consultant for financial issues in Liberty's benchmarking study of Arizona Public Service Company for the Arizona Corporation Commission. Responsible for designing and implementing the financial evaluation and industry benchmarking of APS' financial performance, cash flow metrics, financial risk measures and credit ratings.

Prepared and filed Liberty's direct testimony addressing rate of return, cost of capital and target debt coverage rates in the 2010 rate cases of Arizona Electric Power Company and Southwest Transmission Company for the Arizona Corporation Commission.

Project Manager for the development and implementation of regulatory financial systems and models for deregulated ratemaking at Pacific Gas and Electric Company. The project involved developing regulatory strategy, California Public Utilities Commission earnings monitoring models, data bases, analytical models and reporting for all regulatory requirements of PG&E's regulated businesses.

Project Leader for Liberty's evaluation of cost of capital issues for a Yankee Gas rate case for the Connecticut DPUC. Scope of work included the analysis of the cost of equity and debt, capital structure, and short-term debt positions of all parties and participation in hearings and drafting of the Staff recommendations regarding Yankee's cost of capital.

Prepared and filed Liberty's direct testimony specifically addressing pension expense and prepaid pension assets in rate base in the 2011 gas rate case of Nova Scotia Power Company for the Nova Scotia UARB.

Prepared and filed direct testimony specifically addressing pension expense and prepaid pension assets in rate base in the 2011 gas rate case of Xcel Energy – Colorado for the Staff of the Public Utilities Commission of the State of Colorado.

Led Liberty's development of a framework and strategy to resolve all electric industry restructuring issues between the State of New Hampshire, Public Service Company of New Hampshire, and the New Hampshire Public Utilities Commission. Project included assessment and valuation of all key assets and development of a disposition strategy for all generation assets, contracts and obligations. The project also included the assessment of alternative rate paths; planning for the securitization and recovery of stranded costs; and the development of provisions for power supply purchases during a transition period.

Lead Consultant in Liberty's financial audit for ratemaking purposes of Verizon New Hampshire (VNH) for the New Hampshire Public Utilities Commission. Responsible for a broad and

comprehensive analysis of the financial status of VNH, including an audit of the books and records of the Verizon parent, in order to assist the commission in determining rate base, rates of return and appropriate adjustments for the test year.

Lead Consultant in Liberty's review of the financial integrity and earnings of Verizon New Jersey's (VNJ) rate regulated and competitive businesses for the New Jersey BPU. Responsible for the financial evaluation of VNJ's earnings, capital structure, rates of return, dividend policies, credit ratings, financial reporting, SEC reporting, and BPU surveillance reports.

Team Leader in providing consulting assistance to Kentucky Utilities (KU) in preparing its initial application for implementing an environmental surcharge. Responsibilities included analyzing legislation, analysis of capital expenditures, analysis of KU's Clean Air Act compliance plan, analysis of costs recoverable under the surcharge, and developing testimony, exhibits, special accounting systems, and rate tariffs.

Project Leader for providing consulting assistance to Big Rivers Electric in preparing its initial application for implementing an environmental surcharge. Responsibilities included a review and evaluation of the economics of a major investment in a flue gas scrubber, analysis of Big Rivers' Clean Air Act compliance plan, evaluating cost recoverable under the surcharge, and developing surcharge testimony, exhibits, accounting systems and rate tariffs.

#### *Utility Financial Insulation/Ring Fencing*

Lead Consultant for Liberty's two separate, comprehensive affiliate relationships and transactions reviews of Duke Energy Carolinas for the North Carolina Utilities Commission staff, and one review for the Indiana Utility Regulatory Commission. Responsibilities included the review of the Duke Energy/Cinergy merger costs to achieve and merger savings, and the separation of holding company and utility financing, cash management and pension plans.

Lead Consultant for the performance of Liberty's audit and testimony for the Delaware Public Service Commission of the affiliate financial costs and risks borne by Delmarva Power, a member of the multi-state holding company, PHI.

Lead Consultant for Liberty's comprehensive review of affiliate relationships, holding company cost allocation, transaction review, and regulatory reporting and rate recovery for a major Northeastern utility holding company. Responsibilities included the review of the holding company organization and management, transactions with its utilities, cost assignment, and capital recovery techniques.

Project Lead for Liberty's review of affiliate relationships, treasury operations and lines of credit, holding company cost allocation, transaction review, and regulatory reporting and rate recovery of Delmarva/PHI Holdings for the Delaware PSC. Responsibilities included the review of the holding company organization and management, all financing and intercompany transfers, the review of transactions with its utilities, cost allocations, and regulatory reporting.

Leader for all financial areas in the review of affiliate transactions among Public Service Electric and Gas, its holding company parent, and the extensive diversified businesses of the holding company. Responsible for evaluating PSE&G's consolidated finance functions to determine whether the financial integrity, flexibility, and cost of capital of the regulated utility had been adversely affected by the activities of diversified affiliates. Work included the review and analysis of the long-term financing, cash management, direct and indirect credit support mechanisms, investor relations, and all transactions between and among the affiliates.

Lead for examining all financial issues in a pre-rate case audit of affiliate relations at Nova Scotia Power Company for the Nova Scotia UARB. Responsibilities included the evaluation of financing vehicles, lines of credit, credit ratings, holding company structure, and financial impacts of the holding company on financing costs.

Led the review of financial impacts and the effectiveness of insulation of the utility from parent and non-utility finances on Liberty's management and affiliate transactions audit of Elizabethtown Gas (ETG), its new parent AGL Holdings and all affiliates for the New Jersey Board of Public Utilities. This project included detailed examinations of affiliate relationships, governance, holding company and financing and credit facilities and utility ring-fencing. Also reviewed were strategic planning, capital and expense budgeting and enterprise risk management.

Lead Consultant for examination of financing and utility insulation on Liberty's focused audit of NUI Corporation and NUI Utilities. This audit included a detailed examination of the reasons for poor financial performance of non-utility operations, effect of affiliate operations, including commodity trading on utility credit and finance, downgrades of utility credit beneath investment grade, and retail and wholesale gas supply and trading operations. The audit included detailed examinations of financial results, sources and uses of funds, accounting systems and controls, credit intertwining, cash commingling, and affiliate transactions, among others. Liberty's examination included very detailed, transaction-level analyses of commodities trading undertaken by a utility affiliate both for its own account and for that of utility operations.

Led the review of financial impacts and the effectiveness of insulation of the utility from parent and non-utility on Liberty's focused and general management audit of NJR, New Jersey Natural Gas and affiliates for the New Jersey Board of Public Utilities. This project included detailed examinations of affiliate relationships, governance, financing and utility ring-fencing, compliance with New Jersey EDECA requirements for affiliate separation, protection of confidential information, non-discrimination against third-party competitors with utility affiliates, and other code-of-conduct issues.

Led the review of financial impacts and effectiveness of insulation of the utility from parent and non-utility operations and finances on Liberty's focused and general management audits of SJI, South Jersey Gas, and affiliates for the New Jersey Board of Public Utilities. This project included detailed examinations of affiliate relationships, governance, financing and utility ring-fencing, compliance with New Jersey EDECA requirements for affiliate separation, protection of

confidential information, non-discrimination against third-party competitors with utility affiliates, and other code-of-conduct issues.

Led the evaluation of the financial relationships between Hawaiian Electric Industries and Hawaiian Electric Company for the Hawaii Department of Commerce and Consumer Affairs. The focus of the review was the credit and financial support provided by the utility company to the holding company and its diversified businesses.

Led the review and analysis of corporate governance, financial relationships and affiliate transactions between Virginia Power and its parent, Dominion Resources for the Virginia State Corporation Commission. The review included an evaluation of all utility and non-utility financing, governance and economic impacts. The engagement was in response to a well-publicized dispute between the holding company and Virginia Power.

*Other*

Led the review and evaluation of the financial management practices of a major utility holding company. Engagement included an assessment of overall financial management and crisis-liquidity plans; strategic and business planning; asset valuations and their accounting impacts upon deregulation; independent power contract buy-downs; and rate reduction strategies.

Led the evaluation and recommendation of strategic lines of business for a major municipal utility facing industry deregulation.

Led the development of a strategic framework for the establishment and growth of non-regulated businesses for a major international electric holding company.

Led the development, analysis, and recommendation of alternative electric generation and power resource strategies for a regional generation and transmission company in preparation for electric deregulation.

Led the review and evaluation of all utility and non-utility financing, financial relationships, and affiliate transactions between a major utility holding company and its electric company subsidiary.

Leader for all financial areas in the evaluation of the diversified businesses of a major utility holding company. Engagement determined the impact on financial integrity, financial flexibility, credit mechanisms, and the cost of capital of the substantially diversified businesses of the holding company.

Led the development of an overall gas business strategy, capital asset allocation methods, financial analysis programs and gas main extension policy for a Midwestern combination utility.

**Education**

M.B.A., Finance, University of Denver  
B.A., Business Administration, Monmouth

**Southwest Transmission Cooperative, Inc.**  
**Computation of TIER, DSC, Equity Ratio and Rate of Return**  
Sources: RUS Form 12  
Twelve Months Ended December 31, 2008, 2009, 2010, 2011 and 2012

Line	Description	RUS FORM 12 12 Mos. Ended 12/31/08	RUS FORM 12 12 Mos. Ended 12/31/09	RUS FORM 12 12 Mos. Ended 12/31/10	RUS FORM 12 12 Mos. Ended 12/31/11	Preliminary 12 Mos. Ended 12/31/12
1	<b>Times Interest Earned Ratio Calculation:</b>					
2	Net Patroage Capital or Margins	\$ 4,934,859	\$ 40,487	\$ (676,488)	\$ 5,678,785	\$ 7,866,198
3	Interest on Long-Term Debt	4,934,859	5,222,239	5,362,331	5,348,825	5,813,256
4	<b>Total</b>	<b>\$ 9,870,387</b>	<b>\$ 5,262,752</b>	<b>\$ 4,685,923</b>	<b>\$ 11,024,810</b>	<b>\$ 12,879,454</b>
5						
6	Times Interest Earned Ratio	2.00	1.01	0.97	2.06	2.57
7	Average of Two Highest Years					2.31
8						
9	<b>Debt Service Coverage Ratio Calculation:</b>					
10	Net Patroage Capital or Margins	\$ 4,934,859	\$ 40,487	\$ (676,488)	\$ 5,678,785	\$ 7,866,198
11	Depreciation & Amortization Expense	4,347,789	4,983,858	5,432,523	5,384,647	6,882,146
12	Interest on Long-Term Debt	4,934,859	5,222,239	5,362,331	5,348,825	5,813,256
13	<b>Total</b>	<b>\$ 14,317,976</b>	<b>\$ 10,245,794</b>	<b>\$ 10,118,646</b>	<b>\$ 16,411,657</b>	<b>\$ 18,561,600</b>
14						
15	Principal Payments	\$ 8,338,766	\$ 4,088,918	\$ 4,315,328	\$ 4,255,639	\$ 4,944,928
16	Interest on Long Term Debt	4,934,859	5,222,239	5,362,331	5,348,825	5,813,256
17	<b>Total</b>	<b>\$ 13,273,625</b>	<b>\$ 9,311,149</b>	<b>\$ 9,677,659</b>	<b>\$ 10,383,464</b>	<b>\$ 9,558,176</b>
18						
19	Debt Service Coverage Ratio	1.87	1.18	1.05	1.62	1.98
20	Average of Two Highest Years					1.76
21						
22	<b>Equity as a Percent of Total Capitalization:</b>					
23	Equity and Margins	\$ 9,398,483	\$ 9,439,165	\$ 8,763,551	\$ 14,442,489	\$ 22,388,684
24	Long Term Debt (Including Current Portion)	98,447,160	112,149,159	113,768,026	112,482,969	98,688,217
25	Short Term Debt	-	-	-	-	-
26	<b>Total Capitalization</b>	<b>\$ 107,845,643</b>	<b>\$ 121,588,324</b>	<b>\$ 123,531,577</b>	<b>\$ 126,925,378</b>	<b>\$ 126,908,901</b>
27						
28	Equity - Percent of Capitalization	8.71%	7.76%	7.05%	11.38%	18.05%
29						
30	<b>Funds From Operations/ Interest on Long Term Debt:</b>					
31	Operating Margins	\$ 4,768,895	\$ (72,428)	\$ (878,578)	\$ 5,371,868	\$ 7,443,792
32	Plus:					
33	Depreciation and Amortization	4,347,789	4,983,858	5,432,523	5,384,647	6,882,146
34	<b>Funds From Operations</b>	<b>\$ 9,197,884</b>	<b>\$ 4,910,630</b>	<b>\$ 4,544,245</b>	<b>\$ 10,756,525</b>	<b>\$ 13,525,938</b>
35						
36	Interest on Long Term Debt	\$ 4,934,859	\$ 5,222,239	\$ 5,362,331	\$ 5,348,825	\$ 5,813,256
37						
38	FFO/Interest Coverage	2.05	1.94	1.85	2.01	2.70
39						
40	Long Term Debt (Including Current Portion)	\$ 98,447,160	\$ 112,149,159	\$ 113,768,026	\$ 112,482,969	\$ 98,688,217
41	Obligations Under Capital Lease (Including Current Portion)	-	-	-	-	-
42	Notes Payable	-	-	-	-	-
43	<b>Total Debt</b>	<b>\$ 98,447,160</b>	<b>\$ 112,149,159</b>	<b>\$ 113,768,026</b>	<b>\$ 112,482,969</b>	<b>\$ 98,688,217</b>
44						
45	FFO/Debt	9.25%	4.38%	4.01%	9.56%	13.72%
46						

BEFORE THE ARIZONA CORPORATION COMMISSION

BOB STUMP  
Chairman  
GARY PIERCE  
Commissioner  
BRENDA BURNS  
Commissioner  
BOB BURNS  
Commissioner  
SUSAN BITTER SMITH  
Commissioner

IN THE MATTER OF THE APPLICATION OF ) DOCKET NO. E-04100A-12-0353  
THE SOUTHWEST TRANSMISSION )  
COOPERATIVE, INC. FOR A HEARING TO )  
DETERMINE 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 )  
\_\_\_\_\_ )

DIRECT  
TESTIMONY  
OF  
DENNIS M. KALBARCZYK  
(CONSULTANT)  
ON BEHALF OF THE STAFF OF THE  
UTILITIES DIVISION  
ARIZONA CORPORATION COMMISSION

APRIL 4, 2013

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1 **I. INTRODUCTION**

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

3 A. My name is Dennis M. Kalbarczyk. My business address is 910 Piketown Road, Harrisburg,  
4 Pennsylvania 17112.

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

7 A. I am the principal of Utility Rate Resources, and maintain a professional relationship with the  
8 Liberty Consulting Group, Inc., ("Liberty"). Liberty has been engaged by the Arizona  
9 Corporation Commission ("ACC" or "Commission") to assist the Utilities Division ("Staff")  
10 in the review of the Southwest Transmission Cooperative Inc.'s ("SWTC" or "Cooperative")  
11 application for a general rate decrease in the proceeding at Docket No. E-04100A-12-0353.

12  
13 **Q. Briefly summarize your education background and professional qualifications.**

14 A. I graduated in 1971 with a Bachelor of Science Degree in Accounting from Husson College  
15 (now Husson University), in Bangor, Maine. In 1969, I received an Associate in Art Degree  
16 in Accounting from Strayer College (now Strayer University), in Washington D.C. I am the  
17 principal of Utility Rate Resources, which was formed in October 1990. I have prepared over  
18 fifty rate case filings which included almost all key aspects of the ratemaking process such  
19 as: revenue requirement elements (revenues, operation & maintenance expenses,  
20 administrative and general expenses, taxes, depreciation and amortization expenses, and rate  
21 base valuation); rate of return; cost of service; rate design; and, other specialty tariff rate  
22 design matters.

23  
24 I was employed by Drazen-Brubaker & Associates, Inc. from March 1988 to September  
25 1990. I presented testimony and prepared financial statements necessary for applications for  
26 Certificates of Public Convenience before the Pennsylvania Public Utility Commission

1 (“PaPUC”). Additionally, I was responsible for the preparation and filing of rate cases, and  
2 testified on behalf of utilities under PaPUC regulation. Prior to March 1988, I was employed  
3 by Metropolitan Edison Company, a subsidiary of First Energy, formerly GPU Energy and  
4 General Public Utilities. I spent three years in the utility’s Rate Revenue Requirement  
5 Department as a Senior Financial Analyst. My responsibilities included the preparation,  
6 review, and analysis of financial reports, budgets, and management responsibility for rate and  
7 regulatory matters before the PaPUC.

8  
9 From 1975 through 1985, I was employed by the PaPUC, serving primarily in the  
10 performance of financial and operations audits and in rate proceedings. I testified on revenue  
11 requirements matters in nearly all the major electric rate cases during my time at the PaPUC,  
12 and performed audits on electric, gas, and water companies for compliance with Commission  
13 regulations in the areas of energy cost, coal and gas contracts, and affiliated service contracts.  
14 I testified in Energy Cost Rate, Gas Cost Rate, and Coal Compliance proceedings. I actively  
15 participated in developing the Commission's first set of regulations on Fuel Procurement  
16 Policy and Procedures, Tariffs and Procedures on Energy Cost Rates for electric companies  
17 and Gas Cost Rates for gas companies, and designed computerized procedures for electric  
18 utilities to report fossil fuel purchases to the PaPUC. From 1972 to 1975, I held progressive  
19 degrees of responsibilities with Certified Public Accounting firms performing accounting,  
20 auditing and tax preparation duties.

21  
22 I have specialized in the area of utility rate and economic consulting related to the financial  
23 aspects of public utility rates and regulation. My work has encompassed rate case filings,  
24 certificates of public convenience, expert testimony, and financial applications for funding by  
25 the Pennsylvania Infrastructure Investment Authority. I have participated in regulatory and  
26 legal proceedings concerning investor-owned and municipal utilities, and testified before

1 governmental agencies and courts, and have represented utilities as well as consumers of  
2 utility services. From 2002 to date, I have been providing senior level consulting services to  
3 Liberty, participating in an audit of electricity distribution service costs for inclusion in  
4 revenue requirement before the Illinois Commerce Commission, and serving as a team  
5 member on focused audits (for the New Jersey Board of Public Utilities) addressing  
6 financing, accounting, and affiliate charges of National Utilities Inc. (Elizabethtown Gas),  
7 South Jersey Gas, and New Jersey Natural Gas. I participated in Liberty examinations of fuel  
8 adjustment mechanism costs and issues for staffs of the Arizona Corporation Commission  
9 and the Nova Scotia Utility and Review Board (“NSUARB”). I also participated in Liberty’s  
10 engagements to assist Staff in the review of SWTC’s and the Arizona Electric Power  
11 Cooperative, Inc. (“AEPCO”) applications for a general rate increase in the proceedings at  
12 Docket Nos. E-04100A-09-0496 and E-01773A-09-0472 pertaining to cost of service and  
13 rate design matters, respectively and testified to same. Finally, I actively participated with  
14 Liberty in Nova Scotia Power Incorporated’s last two general rate increase filings pertaining  
15 to revenue requirement matters, and testified to same.

16  
17 I have testified in more than 70 rate and regulatory matters on behalf of state regulatory  
18 commissions, utilities, municipal authorities, and various consumer groups.

19  
20 **II. BACKGROUND**

21 **Q. What is the purpose of your testimony?**

22 A. I am addressing, on behalf of the Staff, SWTC’s revenue requirement request and the fully  
23 allocated cost of service study and proposed rate design as submitted by SWTC witnesses  
24 Peter Scott and Gary E. Pierson. With regard to various elements within SWTC’s revenue  
25 requirement request I will also be relying upon the review and recommendations of other  
26 Liberty team members involved in the instant proceeding. I provide the following brief

1 summary of the area of responsibilities of the Liberty team members. Mr. Vickroy will  
2 address the overall rate of return component related to the net income component level to be  
3 factored into the determination of revenue requirement. Mr. Mazzini performed an  
4 engineering review of the SWTC transmission system facilities; thus, reliance upon his  
5 findings and recommendations are relevant in-part to plant and depreciation matters, as well  
6 as related operation and maintenance criteria related to same. Findings and  
7 recommendations proposed by these team members, if any, will be incorporated into  
8 Liberty's overall revenue requirement recommendation in the instant proceeding.  
9

10 **Q. Briefly state your understanding of the nature of this proceeding?**

11 A. On August 3, 2013, SWTC filed a general rate application with the Commission,  
12 requesting an overall revenue decrease of approximately \$12.76 million to its pro forma  
13 adjusted December 31, 2011, test year present rate revenues to become effective on  
14 November 1, 2013. The filing would produce a 29 percent decrease to proposed rate  
15 revenues, if accepted as filed.<sup>1</sup> Table 1 below reflects the major revenue requirement  
16 elements within SWTC's filing (operation and maintenance expenses, depreciation and  
17 amortization expenses, taxes, and net income). For ratemaking purposes the overall rate  
18 of return is expressed as percentage of net income over rate base values (net plant-in-  
19 service values and other investment values such as fuel and material and supplies stock).  
20

21 The table shows reclassified per-book revenues and expenses of \$38.5 and \$27.6 million,  
22 respectively, which produce \$10.9 million of net income, or an 11.11 percent overall rate  
23 of return when divided by \$97.9 million of rate base values. On a pro forma adjusted  
24  
25

---

<sup>1</sup> Sch. A-1, L7 and 10.

1 basis revenues less expenses of \$46.4 and \$24.4 million produce \$22 million of net  
2 income, or a 22.22 percent overall rate of return when divided by \$99 million of pro forma  
3 rate base values. Thus, a \$12.8 million reduction to revenues and net income produces a  
4 9.34 percent rate of return - \$9.2 million adjusted net income divided by same \$99 million  
5 rate base value.  
6

**Table 1 – Summary of As-Filed Revenue Requirements**

	<u>Reclassified Per Books</u>	<u>Pro Forma Adjustments</u>	<u>Pro Forma Present</u>	<u>Change In Revenues</u>	<u>Pro Forma Proposed</u>
Class A Member	\$26,139,718	\$1,163	\$26,140,881	(\$7,549,371)	\$18,591,510
Point-To-Point	6,407,808	8,053,056	14,460,864	(4,208,400)	10,252,464
Other Operating	5,957,633	(125,092)	5,832,541	(999,442)	4,833,099
Total Revenues	\$38,505,159	\$7,929,127	\$46,434,286	(\$12,757,213)	\$33,677,073
Oper. & Maint.	\$20,127,621	(\$1,843,269)	\$18,374,352		\$18,374,352
Depr. & Amort.	5,384,647	(1,351,063)	4,033,584		4,033,584
Taxes	2,022,230		2,022,230		2,022,230
Total Expenses	\$27,534,498	(\$3,194,332)	\$24,430,166		\$24,430,166
Oper. Net Inc.	\$10,970,661	\$11,123,459	\$22,004,120	(\$12,757,213)	\$9,246,907
Plant-In-Service	\$176,523,839	(\$4,413)	\$176,519,426		\$176,519,426
Accum. Depr.	(79,477,131)	1,357,291	(78,119,840)		(78,119,840)
Accum. Amort.	(2,274,792)		(2,274,792)		(2,274,792)
Net Plant	\$94,771,916	\$1,352,878	\$96,124,794		\$96,124,794
Fuel Stock					
Mat. & Suppl.	3,148,792	(263,715)	2,885,077		2,885,077
Rate Base	\$97,920,708	\$1,089,163	\$99,009,871		\$99,009,871
Rate of Return	11.11%		22.22%		9.34%

7  
8 The table provides an overview under a traditional ratemaking approach based upon an  
9 overall rate of return calculation. As a cooperative, SWTC's revenue requirements are  
10 driven by margins necessary to maintain an adequate Debt Service Coverage ("DSC") and  
11 Total Interest Earned Ratio ("TIER"). The next table shows SWTC's per-books and pro  
12 forma present and proposed DSC and TIER ratios. SWTC's as-filed proposed DSC ratio

of 1.35x would reflect a \$3.5 million (\$13.4 - \$9.9) margin above long-term debt service requirements.

**Table 2 – Summary of As-Filed Debt Service Coverage Requirements**

	<u>Reclassified Per Books</u>	<u>Pro Forma Adjustments</u>	<u>Pro Forma Present</u>	<u>Change In Revenues</u>	<u>Pro Forma Proposed</u>
Oper. Net Income	\$10,880,661	\$11,123,459	\$22,004,120	(\$12,757,213)	\$9,246,907
Int. & Other Ded.	(5,509,657)	339,207	(5,170,450)		(5,170,450)
Other Income	307,780		307,780		307,780
Net Margin	\$5,678,784	\$11,462,666	\$17,141,450	(\$12,757,213)	\$4,384,237
Depr. & Amort.	5,384,647	(1,351,063)	4,033,584		4,033,584
Int. On L/T Debt	5,348,025	(339,207)	5,008,818		5,008,818
Available Funds	\$16,411,456	\$9,772,396	\$26,183,852	(\$12,757,213)	\$13,426,639
P&I on L/T Debt	\$10,103,587	(\$157,928)	\$9,945,659		\$9,945,659
DSC	1.62x		2.63x		1.35x
TIER (Net Margin + Int LT Debt / Int LT Debt)	2.06x		4.42x		1.88x

SWTC's last rate was filed on October 16, 2009, at Docket No. E-04100A-09-0496. Commission Decision No. 72030 authorized new rates to go into effect on January 1, 2011. SWTC has requested that the effective date of the change in rates coincide with the timing that AEPCO's pending rate change request before the Commission goes into effect.

**Q. Briefly summarize SWTC's members and corporate governess.**

A. SWTC is a non-profit electric transmission cooperative subject to certain Federal Energy Regulatory Commission ("FERC") jurisdictional requirements. SWTC must comply with FERC Order 888 and maintain an Open Access Transmission Tariff ("OATT"). Order 888 requires transmission providers to offer firm or non-firm Point-to-Point and firm Network service transmission on a non-discriminatory open basis. Consistent with the FERC's OATT requirements, SWTC seeks approval of proposed monthly, Network Services Rates, Point-to-

1 Point Service Rates and System Control and Load Dispatch Rates, and six ancillary service  
2 rates. Additionally, Section 211 of the Federal Power Act allows customers to seek  
3 transmission services from transmission providers like SWTC.

4  
5 The Commission has jurisdiction over the rates and charges assessed by SWTC to its six  
6 Class A members, which include Anza Electric Cooperative in south-central California and  
7 Duncan Valley Electric Cooperative, Inc. and Graham County Electric Cooperative, Inc., in  
8 Arizona. SWTC also provides service to Mohave Electric Cooperative, Inc., ("MEC"),  
9 Sulphur Springs Valley Electric Cooperative, Inc. ("SSVEC"), and Trico Electric  
10 Cooperative, Inc. ("TRICO") all of which are regulated by the Commission. These same six  
11 members are also members of AEPCO. SWTC's Class B Members are AEPCO and Sierra  
12 Southwest, a cooperative formed as part of AEPCO's restructuring. SWTC also provides  
13 OATT wholesale transmission service to the City of Safford and Town of Thatcher. It also  
14 has pre-OATT transmission agreements with the Avra Valley Irrigation and Drainage  
15 District and the Silverbell Irrigation and Drainage District. SWTC also enters into Network  
16 transmission and firm and non-firm Point-to-Point transmission service agreements pursuant  
17 to the terms of Commission-approved tariffs and Open Access Transmission Tariff  
18 provisions.

19  
20 **Q. Please explain your understanding of SWTC's requested change in rates.**

21 A. The overall proposal reflects a decrease in revenue requirements; however, rates for  
22 service provided will either increase or decrease based upon cost of service principles.  
23 Table 1 above shows that SWTC has proposed pro forma reductions in all major  
24 component areas of its revenue requirement (operating revenues and operation and  
25 maintenance expenses, and depreciation expenses, except for a slight uptick in rate base  
26 value).

1 SWTC owns approximately 620 miles of transmission lines and 24 substations. Some of  
2 the transmission facilities are jointly owned with Salt River Project and Tucson Electric  
3 Power. SWTC also has contracts to receive transmission services from Arizona Public  
4 Service Company, Western Area Power Administration and Southern California Edison.  
5 Thus, the economic decisions members make in securing transmission service  
6 requirements along with other changes in costs are reflected in the total cost of service or  
7 revenue requirement, in the cost of service allocation study, and ultimately in rate design.  
8 Thus, while rates will decrease in general, the level of change will vary among the various  
9 rates for service provided.

10  
11 Table 3 provides a comparison of present to proposed rates.  
12

<b>Table 3 - Comparison of Present and Proposed Rates \$ and % Increase/(Decrease)</b>				
<b>RATE DESCRIPTION</b>	<b>PRESENT</b>	<b>PROPOSED</b>	<b>\$ CHANGE</b>	<b>%</b>
<b>Transmission Services:</b>				
Firm Network Service - \$ Monthly Rev. Req.	\$ 2,187,176	\$ 1,570,730	\$ (616,446)	-28%
Firm Network Service - \$ Annual Rev. Req.	\$ 26,246,111	\$ 18,848,758	\$ (7,397,353)	-28%
Firm Network Service - Mohave Electric 2 \$ Monthly Rev. Req.	\$ 2,056,562	\$ 1,251,434	\$ (805,128)	-39%
Firm Network Service - Mohave Electric 2 \$ Annual Rev. Req.	\$ 24,678,748	\$ 15,017,214	\$ (9,661,534)	-39%
Firm Point-to-Point Transmission - \$/kW	\$ 3.608	\$ 2.558	\$ (1.050)	-29%
<b>Mandatory Ancillary Services:</b>				
Schedule 1 - Network - System Control & Load Dispatch - \$/kW/mo.	\$ 0.245	\$ 0.173	\$ (0.072)	-29%
Schedule 1 - Point-to-Point - System Control & Load Dispatch - \$/kW/mo.	\$ 0.245	\$ 0.173	\$ (0.072)	-29%
Schedule 2 - Network - Var Support/Voltage Control - \$/kW/mo.	\$ 0.067	\$ 0.096	\$ 0.029	44%
Schedule 2 - Point-to-Point - Var Support/Voltage Control - \$/kW/mo.	\$ 0.049	\$ 0.070	\$ 0.020	41%
<b>FERC Optional Ancillary Services</b>				
Schedule 3 - Network - Reg. & Freq. Resp. - \$/kW/mo.	\$ 0.5325	\$ 0.2602	\$ (0.2723)	-51%
Schedule 4 - Network - Energy Imbalance - Eng. In Kind +/- 1.5% \$/MWh				
AEPCO Pays Positive Imbalance	\$ 36.68	\$ 32.63	\$ (4.05)	-11%
Customer Pays Negative Imbalance	\$ 100.00	\$ 100.00	\$ -	0%

Schedule 5 - Network - Operating Reserves - Spinning - \$/kW/mo.	\$ 0.7060	\$ 0.7232	\$ 0.0172	2%
Schedule 6 - Network - Operating Reserves - Supplemental - \$/kW/mo.	\$ 0.4981	\$ 0.5009	\$ 0.0028	1%
Direct Assignment Facilities				
Trico Electric Only - \$/mo.	\$ 133,210	\$ 133,210	\$ -	0%

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**III. REVENUE REQUIREMENT**

**Q. What general concepts did Liberty apply when reviewing SWTC's revenue requirement request?**

A. SWTC based its revenue requirement on an historic test year ended December 31, 2011. SWTC made adjustments on a pro forma basis to reflect known and measurable changes to operations on a normalized going forward basis. The ratemaking approach in Arizona, which is similar to that of other state utility regulatory authorities, seeks to match investments and expenses required to provide regulated service, in order to identify the corresponding revenues required to provide a margin appropriate for assuring an opportunity to provide a reasonable opportunity for return on investment similar to like businesses facing similar risks. Further, investments (rate base net plant, related fuel stock, and materials and supplies) and expenses must be used and useful, necessary for the conduct of business, and costs must be prudent and reasonable. Finally, the ratemaking process also provides for costs that fluctuate to be normalized or averaged, and that extraordinary or non-recurring costs be amortized where appropriate for recovery over time through the rate setting process.

Liberty's considered all of these factors in its review of SWTC's identification of its total revenue requirement needs. Liberty reviewed all pro forma adjustments, and tested them for reasonableness, and examined other major cost components used to develop the total cost of service or revenue requirement needs.

1 **Q. Please summarize SWTC's reasons for the proposed revenue requirement decrease.**

2 A. Table 4 below summarizes the major pro forma adjustments or changes in operations  
3 affecting net income/margin requirements in support of the overall revenue decrease of \$12.8  
4 million for the pro form adjusted December 31, 2011. Liberty reviewed each of the proposed  
5 adjustments and the table notes its acceptance or not. Liberty also proposes additional  
6 adjustments discussed below. SWTC's pro forma adjustments affect income statement items  
7 (revenue and expense) as well as plant-investment value items (rate base). For example,  
8 SWTC's filing reflects a \$1.35 million net decrease in depreciation expenses based upon an  
9 outside depreciation study. This study found that the lives of various categories of  
10 transmission plant facilities should increase, thus lowering depreciation rates and producing  
11 correspondingly lesser annual depreciation requirements. The study also identified a 5  
12 percent negative salvage value.<sup>2</sup> This adjustment affects revenue requirements associated  
13 with expenses. It also affects the \$96 million transmission facility rate base value claim.  
14 Additionally, substantial net increases in revenue streams will produce a net increase in  
15 margin of \$7.9 million.

16 **Table 4 – Summary of SWTC Pro Forma Adjustments**

1.	AEPCO - ED2 Contract Termination	Electrical Dist. 2 – 8 MW contract expires on 9/20/12	Operating revenues decreased.	(\$369,888)	Accepted
2.	AEPCO SRSG Point-To-Point Contract	New AEPCO 205 MW contract to provide wheeling path so ZEPCO can meet SRSG obligations.	Operating revenues increased.	\$9,478,380	Accepted
3.	CAWCD Sys. Control Services	Annualize system control & load dispatching service revenues	Operating revenues increased.	\$108,000	Accepted

17  
<sup>2</sup> SWTC Exhibit PS-1, Table ES-1, page ES-5.

4.	CAWCD non-recurring services	Eliminates revenues – system control & load dispatching, special contract.	Operating revenues decreased.	(\$559,725)	Accepted
5.	AEPCO N-1 Point-To-Point Contract	20 MW net increase of N-1 needs – New contract of 110 MW's replacing a 50MW and 40MW contract.	Operating revenues increased.	\$924,720	Accepted
6.	Un-Designated Point-To-Point Contracts	FERC Order 888 compliance – Network and PTP service agreements cannot have common delivery point. Contract revisions	Operating revenues decreased.	(\$1,400,266)	Accepted
7.	Chemstar & Network Billing	Remove transmission revenue credits, contract termination.	Operating revenues increased.	\$11,330	Accepted
8.	Payroll & Overheads Adj.		Var. O&M Prod./Other/ cost expenses reduced on going forward basis	\$1,649,183	Accepted (See Liberty Comment)
9.	Trans. Line Designation		Operating revenues decreased.	(\$263,424)	Accepted (See Liberty Comment)
10.	Amortize Rate Case Exp.		3 Year Amortization of Instant \$240,000 Rate Case Expense Claim	(\$80,000)	Accepted (See Liberty Comment)
11.	Cost Cutting Programs		Decrease in O&M Production expenses for cost cutting initiatives	\$274,086	Accepted (See Liberty Comment)

12.	Depr./Amort.		Inc. Depr./Dec.	\$1,351,063	Accepted in-part (Comment)
13.	Cut Debt Ref. Adj.		Reduce Interest exp. refinancing	\$318,335	Accepted
14.	Int. Annualization Adj.		Reduce Interest Expense	\$20,872	Accepted
	Total	Change In Margin		\$11,462,666	

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**IV. RATE BASE ELEMENTS**

3

**Q. What is the significance of rate base value and annual depreciation expense claim as it pertains to the Apache station?**

4

5

**A.** SWTC witness Peter Scott (at pages 6 and 7) of his testimony notes that one of the major reasons for the rate decrease filing is a request to revise its depreciation rates as supported by an outside depreciation study ("SWTC Exhibit PS-2") assessing transmission plant. The transmission facilities represent \$85.5 million of the \$96.1 million pro forma net original cost book investment or rate base (original cost less accumulated depreciation). These facilities comprise 89 percent of total pro forma net original cost rate base value.

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	Orig. Cost	12/31/11 Accum. Depr.	12/31/11 Book Value	Pro Forma Adj.	Net Orig. Cost RB Value
Trans. Fac.					
Str. & Impr.	5,571,344	(2,986,026)	2,585,318	71,228	2,656,546
St. Equip.	82,542,896	(31,946,843)	50,596,053	694,111	51,290,164
Towers & Fixtures	8,237,417	(6,684,920)	1,552,497	152,391	1,704,888
Poles & Fixtures	34,697,838	(15,926,339)	18,771,499	253,561	19,025,060
Overhead Conductors	20,931,349	(12,716,412)	8,214,937	176,014	8,390,951
Roads & Trails	307,850	(137,302)	170,548	3,758	174,306
Subtotal	152,288,694	(70,397,842)	81,890,852	1,351,063	83,241,915
Land	2,301,348		2,301,348		2,310,348

Total	154,590,042	(70,397,842)	84,192,200	1,351,063	85,543,263
Other	21,933,797	(11,354,081)	10,579,716	1,815	10,581,531
All Plant	176,523,839	(81,751,923)	94,771,916	1,352,878	96,124,794

The transmission facility pro forma depreciation expense claim of \$2.8 million of \$4 million total claimed represents 70 percent of the total annual expense claim.

**Table 6 – Depreciation Expense Values, Including Transmission Facility Details**

	Existing	2011	Pro Forma	Pro Forma	Proposed
	Depr. Rate	Depr.	Change In	Depr.	Depr. Rate
			Depr.		
Trans. Facilities					
Structures & Impr.	2.75%	153,212	(71,228)	81,984	1.47%
Station Equip.	2.75%	2,269,930	(694,111)	1,575,819	1.91%
Towers & Fixtures	2.75%	226,529	(152,391)	74,138	.90%
Poles & Fixtures	2.75%	954,191	(253,561)	700,629	2.02%
Overhead	2.75%	575,612	(176,014)	399,598	1.91%
Conductors					
Roads & Trails	2.75%	8,466	(3,758)	4,707	1.53%
Total		4,187,939	(1,351,063)	2,836,876	
Other		1,196,708		1,196,708	
All Plant		5,384,647	(1,351,063)	4,033,584	

Traditional ratemaking concepts would translate these costs into a \$10.8 million annual revenue requirement for the transmission facilities. Margin would be \$8 million (\$85.5 million x 9.34 percent rate of return) and there would be \$2.8 million of annual depreciation expenses. The outside depreciation study leads to \$1.35 million of annual decrease in depreciation expense. SWTC's filing (adjustment 12) reflected a pro forma increase to rate base value and a corresponding decrease to annual depreciation expenses.

SWTC's existing depreciation rates use a uniform 2.75 percent annual depreciation rate.

The outside study evaluated transmission plant on a more detailed functional basis

1 categorized by Structures & Improvements, Station Equipment, Towers & Fixtures, Poles  
2 & Fixtures, Overhead Conductors, and Road & Trails. The study reviewed the remaining  
3 lives of these functional groups based upon industry trends. It produced depreciation rates  
4 that vary for function. Liberty reviewed the rates, including an engineering study, after  
5 which we found the pro forma depreciation expense adjustment as filed to be appropriate.  
6

7 However, SWTC's proposed adjustment to rate base due to a change in going forward  
8 depreciation rates is not appropriate from either an accounting or ratemaking approach. In  
9 short, the change does not impact the remaining net book value of the asset. The remaining  
10 life concept merely addresses the going forward depreciation rates and corresponding  
11 expense necessary to account for the decreasing annual value of the current net book value of  
12 the asset. Thus, any proposed change to net book value based upon changes in depreciation  
13 rates should be disallowed.  
14

15 **Q. What does Liberty recommend regarding SWTC's materials and supplies rate base**  
16 **value claim?**

17 A. Liberty has reviewed the claim which was based upon a 12-month average of 2011 values.  
18 We examined 2010 and 2012 inventory values, reviewed data request responses, and  
19 discussed the adjustment with SWTC. Liberty found the claim to be appropriate.  
20

21 **V. REVENUE AND EXPENSE ELEMENTS**

22 **Q. Provide an overview of the other revenue and expense element adjustments contained**  
23 **in SWTC's filing?**

24 A. Table 4 above identified 14 pro forma adjustments, including adjustment 12 just addressed.  
25 Eight of these pro forma adjustments are specific to revenues. They combine to produce a  
26 \$7.9 million net increase to revenues and corresponding increase to margin. Two of the

1 adjustments would reduce interest expense. Another two address cost savings in maintenance  
2 and payroll matters. The final adjustment reflects a claim for rate case expense associated  
3 with this.

4  
5 **Q. Please address the eight pro forma adjustments specific to revenues.**

6 A. They consist of SWTC pro forma adjustments 1 through 7, and 9. Adjustment 1 removes  
7 revenues due to the expiration of AEPCO's 8 MW sales of 48 MW point-to-point service  
8 contract, related to Electrical District 2 ("ED2"). That agreement was made on September  
9 30, 2012. The adjustment has a value of \$370,000. Adjustment 2 reflects increased revenues  
10 of \$9,478,380 under an AEPCO contract with SWTC to provide a 205 MW of point-to-point  
11 wheeling path that permits AEPCO to meet Southwest Reserve Sharing Group (SRSR)  
12 requirements (\$8,875,680 point-to-point and \$602,700 load dispatch and system control  
13 revenues). Adjustment 3, Central Arizona Water Conservation District ("CAWCD")  
14 annualizes revenues related to System Control & Load Dispatching services, producing a  
15 \$108,000 revenue increase. CAWCD also will no longer need load dispatching & system  
16 control services and special contract services are reduced. Adjustment 4 reflects that change  
17 by reducing revenues by \$35,600 and \$524,125, respectively, for a total reduction of  
18 \$559,725.

19  
20 On January 1, 2011, AEPCO and SWTC entered into an additional 50 MW Point-to-Point  
21 service to provide the necessary wheeling path for an N-1 event. On January 1, 2012, the 50  
22 MW contract and remaining 40 MW contract discussed in adjustment 1 above, or 90 MW  
23 were consolidated into a 110 MW point-to-point service. Adjustment 5 reflects 20 MW of  
24 increased N-1 point-to-point and load dispatch & system service of \$865,920 and \$58,800,  
25 respectively, combining to form a \$924,720 revenue increase.  
26

1           FERC Order 888 requires that Network Service and Point-to-Point agreements may not have  
2           a common delivery point. Adjustment 6 reflects an amendment to support compliance with  
3           this requirement. MEC will un-designate a delivery point, and enter into a 9 MW Point-to-  
4           Point Agreement with SWTC. SWTC will also terminate its 40 MW Point-to-Point  
5           agreement with SSVEC. These changes produce a net revenue decrease of \$1,400,266.

6  
7           Adjustment 8 reflects an \$11,330 revenue increase due to the termination of the peak load  
8           sharing agreement on October 31, 2011, between AEPCO, MEC and Chemstar, making  
9           transmission revenue credits associated with peak load shedding no longer appropriate.

10  
11           Adjustment 9 removes direct assignment revenues associated with the Sandario Line.  
12           Redesignating this line as a system facility produces a \$263,424 revenue decrease.

13  
14           Liberty's review of the above adjustments included responses to discovery and interviews  
15           with appropriate SWTC staff. We found the adjustments to be appropriate.<sup>3</sup>

16  
17   **Q.    What other SWTC expense adjustments has Liberty reviewed?**

18   A.    SWTC made a number of operational changes to reduce cost. Adjustment 8 reflects reduced  
19    SWTC payroll expenses associated with the overall reduction of SWTC and SWTC staff  
20    levels from 302 to 261 employees as part of the Reduction in Force ("RIF") program.<sup>4</sup>  
21    SWTC's share of this reduction was \$1,649,183 in reduced expenses. Liberty reviewed the  
22    underlying cost adjustments, which included reductions in higher paid staff positions (due  
23    mainly to attrition) and some minor new additions of administrative staff. The changes  
24    primarily affect administrative staff; reductions in operating and maintenance staff are

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<sup>3</sup> SWTC REV- 1.7, 1-1.12, 1.16, DK-1.30 (AEPCO DK-1.55) to 1.36 and 1.39; fieldwork interview January 2013.

<sup>4</sup> Information obtained during January 28, 2013 fieldwork to include supplemental response provided on February 7, 2013 by SWTC/SWTC, and DK-1.37 and 1.38.

1 minimal. The 2011 per-book values included additional cost associated with the RIF  
2 program, to cover employees leaving the work force. These transition costs included one  
3 month's payment for each year of service (with a maximum of twelve months), payment of  
4 accrued managed time off, and one-half of accrued sick leave for employees over 55 years of  
5 age. No payment for sick leave went to departing employees under this age. These  
6 nonrecurring costs comprised a substantial amount of the payroll expenses SWTC removed  
7 from the 2011 per-book values. Liberty verified that these cost were excluded from the pro  
8 forma expense claim. Liberty found SWTC's adjustments to be appropriate.

9  
10 **Q. Explain Liberty's position with regard to SWTC's rate case amortization expense claim**  
11 **adjustment number 10.**

12 A. SWTC's rate case expense adjustment claim number 10, requests a three-year amortization  
13 period of the estimated \$240,000 in cost for outside professionals for the instant proceeding,  
14 an \$80,000 claim. Liberty takes exception to the characterization of the claim as an  
15 amortization expense which under more traditional ratemaking concepts should be listed as a  
16 normalization adjustment, recognizing a fluctuating cost to be reflected as average allowance.  
17 An inclusion of amortization expense might inappropriately lead one to believe that the  
18 utility is setting up a regulatory asset with a reasonable expectation of full recovery of the  
19 same item in one or two subsequent rate proceedings. The claim is more appropriately  
20 considered a normalization expense claim for a reasonable allowance based in-part on some  
21 frequency of filings or expectation of the life of the new rates to be set as reasonable  
22 determination. Information provided in response to DK-1.40 indicates a cost slightly in  
23 excess of \$90,000 as of the date of that response pertaining to outside professional services  
24 for the instant proceeding. Liberty understands additional work and fees will be incurred as

1 the case progresses. Thus, Liberty, recommends that the claim be based upon an updated  
2 cost value rather than an estimate, based upon more timely actual updated cost information,  
3 when available.  
4

5 **Q. What is Liberty's position with regard to SWTC's adjustment number 11 related to the**  
6 **\$318,335 proposed reduction in expenses to cost cutting programs?**

7 A. Liberty reviewed SWTC's supporting information related to this item, and discussed that  
8 information with the Cooperative's staff. Reductions in vehicle expense charges totaled  
9 \$180,000 and in vegetation management contracts \$25,511. The balance relates to reduced  
10 professional memberships of \$20,000, \$12,000 in travel fees, and \$36,575 of reduced outside  
11 services.<sup>5</sup> Liberty found this adjustment to be appropriate.  
12

13 **Q. What other analysis did Liberty undertake to determine the reasonableness of the pro**  
14 **forma adjusted 2011 test period?**

15 A. Liberty requested and received additional information pertaining to 2009 and 2010 per-book  
16 cost. We compared that information to the 2011 per-book values. Our purpose was to  
17 identify any trends that would affect the reasonableness of the adjusted, normalized 2011 test  
18 year.<sup>6</sup> Liberty also reviewed SWTC's detail general ledger accounting information for the  
19 2011 test year. We then requested clarifications pertaining to various costs included in the  
20 test year in order to test them for reasonableness.<sup>7</sup>  
21

22 Liberty reviewed SWTC's membership and dues fees of \$312,973. We found that a portion  
23 of the fees paid to various groups to be appropriately includable, but others, such as lobbying  
24 and advocacy activities, are generally considered unacceptable for ratemaking purposes.

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<sup>5</sup> DK-1.42, and January 29-31, 2013 fieldwork and interviews.

<sup>6</sup> DK-1.43 to 1.45, SWTC staff interviews during January 29-31, 2013 filed work, along with supplement information and further discussions on February 19 and 26 and March 7, 2013.

<sup>7</sup> DK-1.46 and supplemental information provided on February 6, 2013, to include later follow-up discussion with SWTC/SWTC staff.

1 Liberty recommends the removal of a portion of the fees paid based upon percentage  
2 identified by SWTC in the prior proceeding. The next table lists the membership group, the  
3 fees paid, and the percentage to be removed. We recommend a downward adjustment of  
4 \$37,449 in such fees.

5 **Table 8 – Membership/Dues Adjustment Analysis**

Membership Agency	\$/Amount Paid	% Lob/ Advoc.	\$/Amount Removed
Grand Canyon State Electric Cooperative Assoc., Inc.	\$116,272	26%	\$30,231
National Rural Electric Cooperative Association	30,077	24%	7,218
Total Downward Adjustment			\$37,449

6  
7 **Q. Please summarize the overall revenue increase impact, rate of return, DSC, and TIER**  
8 **values based upon Liberty's recommendations.**

9 A. As discussed above and summarized on the table below, Liberty proposes a downward  
10 adjustment to operating expenses of \$37,449 pertaining to Memberships and Dues expenses,  
11 a net decrease to expenses and income with no impact on margin. Mr. Vickroy accepts  
12 SWTC's proposed 1.35 debt service coverage ratio as appropriate for determination of the  
13 revenue requirement in this proceeding. Therefore, we recommend no reduction to  
14 net/income or margin. SWTC's proposed \$12,757,213 revenue decrease along with  
15 Liberty's proposed additional revenue decrease of \$37,449 results in total proposed revenue  
16 decrease of \$12,794,662.

17  
18 Lastly, SWTC's filing provided an analysis which indicated a 9.34% overall rate of return  
19 value had it utilized the traditional rate base rate of return approach. As described earlier,  
20 SWTC inappropriately reflected an increase of \$1,351,063 to rate base related to a

1 corresponding increase in depreciation expense based upon new deprecation rates. Again,  
2 the change in depreciation expenses does not impact net book values of assets at the end of  
3 the test year. Thus, the adjusted or lower rate base value would result in a 9.47% overall rate  
4 of return value.

**Table 11 – Summary Revenue Requirement Impact of Liberty’s Recommended Adjustments**

	SWTC Pro Forma Request As-Filed			Liberty Recommended	
	Current	Change	Proposed	Adjustments	Proposed
Gross Revenue	\$46,434,286	(\$12,757,213)	\$33,677,073	(\$ 37,449)	\$33,639,624
Oper. Expenses	24,430,166		24,430,166	( 37,449)	24,392,417
Operating Income	\$22,004,120	(\$12,757,213)	\$ 9,246,907	\$ 0	\$ 9,247,207
Rate Base	\$99,009,871		\$99,009,871	(\$1,351,063)	\$97,658,808
Rate of Return	22.22%		9.34%		9.47%
Operating Income	\$22,004,120	(\$12,757,213)	\$ 9,246,907	\$ 0	\$ 9,247,207
Int. & Other Ded.	(5,170,450)		(5,170,450)		(5,170,450)
Other Income	307,780		307,780		307,780
Net Margin	\$17,141,450	(\$12,757,213)	\$4,384,237	\$ 0	\$4,384,237
Depr. & Amort	4,033,584		4,033,584		4,033,584
Int. On L/T Debt	5,008,818		5,008,818		5,008,818
Avail For L/T Debt	\$26,183,852	(\$12,757,213)	\$13,426,639	\$ 0	\$13,426,639
Debt Service L/T	\$9,945,659		\$9,945,659		\$9,945,659
DSC	2.63		1.35		1.35

5  
6 **Q. Do you have any other comments with regard to the instant filing?**

7 **A.** Yes, we retain the ability to amend our recommendations following any changes that may  
8 come to light as a result of further discussions, including updated cost information, possible  
9 stipulated issues and other various revenue requirement elements that may have an impact on  
10 revenue requirements.

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

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

**BEFORE THE ARIZONA CORPORATION COMMISSION**

BOB STUMP  
Chairman  
GARY PIERCE  
Commissioner  
BRENDA BURNS  
Commissioner  
BOB BURNS  
Commissioner  
SUSAN BITTER SMITH  
Commissioner

IN THE MATTER OF THE APPLICATION OF )  
THE SOUTHWEST TRANSMISSION )  
COOPERATIVE, INC. FOR A HEARING TO )  
DETERMINE 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 )  
\_\_\_\_\_ )

DOCKET NO. E-04100A-12-0353

DIRECT

TESTIMONY

(ENGINEERING ANALYSIS)

OF

RICHARD MAZZINI

(CONSULTANT)

ON BEHALF OF THE STAFF OF THE

UTILITIES DIVISION

ARIZONA CORPORATION COMMISSION

APRIL 4, 2013

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1 **Introduction**

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

3 A. My name is Richard Mazzini. I am an Executive Consultant associated with The Liberty  
4 Consulting Group ("Liberty"). My Liberty business address is: The Liberty Consulting  
5 Group, 65 Main Street, P.O. Box 1237, Quentin, Pennsylvania 17083.

6  
7 **Q. Mr. Mazzini, briefly summarize your education background and professional  
8 qualifications as they relate to the subject of your testimony.**

9 A. I have been engaged as a consultant and utility manager in the electric utility industry  
10 since 1967. Until 1995, I was employed by Pennsylvania Power & Light Company in a  
11 variety of senior management positions. After entering the consulting business in 1995, I  
12 served in senior positions with Washington International Energy Group, Navigant  
13 Consulting and ABB. I have been an independent consultant since 2001. As a  
14 consultant, I have assisted utilities throughout the United States, Canada, the Caribbean  
15 and Europe and have worked on behalf of many utility regulatory authorities.

16  
17 I have a B.E.E. degree from Villanova University and an M.S. degree in Nuclear  
18 Engineering from Columbia University. I am a Registered Professional Engineer in  
19 Pennsylvania and a member of the Institute of Electrical and Electronics Engineers and  
20 the American Nuclear Society.

21  
22 **Q. Have you prepared a more detailed summary of your background?**

23 A. Yes; Exhibit RAM-1 provides it.

24  
25 **Q. What is the purpose of your testimony?**

26 A. Liberty conducted an engineering analysis of the assets of Southwest Transmission  
27 Cooperative, Incorporated ("SWTC"). Our goal was to evaluate SWTC's electric  
28 transmission service quality and maintenance practices. We reviewed existing maintenance  
29 practices, examined how SWTC documents them, and reviewed management controls to

1 ensure proper implementation and execution of those practices. Liberty also reviewed  
2 outages on the transmission system. Liberty also conducted a review designed to determine  
3 the “used and useful” nature of rate-base assets. Liberty’s review included physical field  
4 inspections of SWTC facilities and interviews with the personnel responsible for managing  
5 them.

6  
7 I performed this engineering review and prepared a report addressing the findings,  
8 conclusions, and recommendations of that examination, which is included as Exhibit  
9 RAM-2. This report presents the results of Liberty’s review, categorized into the  
10 following subjects:

- 11 • Capital additions and rate base
- 12 • Operation and Maintenance
- 13 • Reliability
- 14 • Facility Review

15  
16 The purpose of my testimony is to support and respond to questions regarding Exhibit  
17 RAM-2.

18  
19 **Q. Does that conclude your direct testimony?**

20 **A. Yes, it does.**

## **Richard Mazzini**

---

### **Areas of Specialization**

Management and regulatory audits; utility operations, including nuclear and other power production; power marketing and risk management; strategic planning; organization analysis and competitive re-structuring; project management; cost management; and tariff design and management.

### **Relevant Experience**

#### *The Liberty Consulting Group*

Public Service Commission of New York – A management audit of Iberdrola SA/Iberdrola USA/NYSEG and RG&E. Assistant Project Manager for a 14-member Liberty consultant team.

Public Service Commission of New York – A management audit of Con Edison. Assistant Project Manager for a 13-member Liberty consultant team.

Iowa Utilities Board – Lead Consultant for the reviews of Electric Operations and Emergency Planning for Liberty’s management and operations audit of Interstate Power and Light.

Arizona Corporation Commission - Consultant on Liberty’s benchmarking analysis of Arizona Public Service. This study covered a ten-year audit period and benchmarked Arizona Public Service’s performance with the following metrics: Operational Performance, Cost Performance, Financial Performance, Affiliate Expenses, and Hedging & Risk Management.

Maine Public Utilities Commission – Lead Consultant for the review and analysis of proposed new transmission project, the Maine Power Reliability Project (MPRP). Lead Consultant for economic analysis.

Public Service Commission of Maryland – Lead Consultant supervising the various auctions for procurement of power for Maryland’s standard offer service (SOS) customers and support for the PSC in their analysis of new approaches to SOS supply.

Lead Consultant for Gas and Electric Infrastructure Improvement on Liberty’s work for NorthWestern Energy to formulate long-range integrated infrastructure plans for its multi-state electric and natural gas distribution utilities. This project includes consideration of how to incorporate “Smart Grid” technology into infrastructure plans in a manner that will enable the Company to roll out new capabilities and services as technology makes them available, without undue acceleration of capital spending as uncertainties in this new marketplace become resolved.

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Lead Consultant for Liberty’s audit of Arizona Electric Power Cooperative for the Arizona Corporation Commission which included reviews of fuel procurement and management, bulk electricity purchases and sales, power plant management, operations and maintenance, energy clause design and operation, and other issues affecting the prudence, reasonableness, and accuracy of costs that pass through the fuel and energy clause.

Lead Consultant for Liberty’s audit of East Kentucky Power Cooperative, which included examinations of Governance, Planning, Finance, and Budgeting. Liberty performed for the Kentucky Public Service Commission an examination of governance at a generation and transmission cooperative serving 16 distribution cooperatives across the state. This study came in the wake of significant financial difficulties and also addressed planning, budgeting, financial, and risk functions and activities.

Lead Consultant for Liberty's audit for the Virginia State Corporation Staff of Potomac Edison Distribution System Transfer. Liberty examined the public interest questions associated with the transfer by an Allegheny Energy's utility operating subsidiary (Potomac Electric) of all of its electricity distribution operations business and facilities in Virginia to two rural electric cooperatives.

### *Management Audits*

Public Service Commission of New York – An operational audit of Con Edison's reliability and emergency response planning and processes. Lead Consultant for corporate strategy and priorities, emergency planning and organization.

Federal Energy Regulatory Commission (FERC) – A review of the California ISO. Examined governance issues, operating procedures, transmission planning and analysis, organizational issues, interfaces with stakeholders and recommendations for the restructuring of the California market.

City of Seattle (Washington) – Review of the City's utility, commissioned by City Council and the Office of City Auditor, to analyze financial strategies, power market and risk management strategies and governance schemes. Lead Consultant for risk management.

St. Vincent Electricity Services, Ltd. – A management audit commissioned by the Board of Directors. Scope included generation, transmission, distribution, organizational assessment, safety, procurement and fuel.

New Jersey Bureau of Public Utilities – Evaluation of the gas supply and hedging programs of the four New Jersey gas distribution companies.

New York Power Authority – Consulting support for an internally sponsored audit of energy risk management functions.

*Strategic Business Planning*

Barbados Light & Power Company -- Project Manager and Lead Consultant for a strategic planning initiative. Major areas of attention included new generation options, regulatory strategies, competitive threats, tariff design, new business opportunities, human resource issues, and planning processes.

Barbados Light & Power Company – Project Manager and Lead Consultant for the development of a model for the risk analysis of various new generation investments.

Electricité de France -- Provided business planning and analysis services in the furtherance of the utility's wholesale and retail businesses. The work included research and analysis of potential gas partnerships, trading alliances and development of new retail markets throughout Europe.

SaskPower (Saskatchewan) – Project Manager and Lead Consultant for development of a strategic plan for the Power Production Business Unit. The project included asset valuation and optimization, transmission plans and strategies, efficiency improvement, market analysis and organizational options.

Omaha Public Power District – Project Manager and Lead Consultant for an extensive strategic business planning initiative. This multi-phase project spanned one year and included (1) asset evaluation, estimation of potential stranded costs and stranded cost mitigation strategies; (2) business growth strategies, including retail retention and expansion, new products and services, new utility businesses, wholesale marketing and bulk power trading; (3) corporate restructuring through the formation of four new business units; (4) organization design, including the creation of two new marketing organizations and a new trading floor; and (5) regulatory and legislative strategy development.

Omaha Public Power District – Project Manager and Lead Consultant for a follow-up analysis to the above project a year later to recommend added steps and course corrections. Provided new recommendations on organization design, customer service, stranded costs, energy marketing

and trading initiatives, risk management, new business development, new products and services and strategic planning processes.

A Large Canadian Provincial Electric Utility – Strategic planning and business support in the analysis of future generation and transmission options associated with a major new generation construction project.

Tennessee Valley Public Power Association - Project Manager and Lead Consultant for development of a comprehensive new business strategy that reinvented the Association for a competitive environment. Key elements of the plan included a new expanded focus on government relations and the influencing of public policy, as well as the creation of four new business units and business endeavors.

City Council of Los Angeles (California) - Advice to the Council on the strategic plans of its municipal electric utility. Conduct of a workshop for the Council and staff on restructuring and competitive issues. Review of power marketing alliance strategies.

Riverside Public Utilities (California) - Analysis of the potential to sell all or part of the utility. Development of a new business vision and strategy. Analysis of outsourcing and alliance possibilities. Development of a power supply alliance, including design of the venture, development of RFP, evaluation of bidders, selection of finalist and negotiations. Organizational design and implementation. Planning and project management support for activities leading to open access.

Lower Colorado River Authority – Consulting support for strategic review and development of alliance strategies. Facilitation of management workshop to develop strategic responses to key issues and to examine options for strategic alliances.

ElectriCities of North Carolina – Business simulations and strategic planning for the North Carolina Power Agencies.

ElectriCities of North Carolina – Analysis of the Carolina P&L – Florida Progress merger with resulting strategies and negotiations on behalf of ElectriCities.

4-County Electric Cooperative - Strategic planning support for the Chief Executive Officer and Board of Directors. Designed and facilitated a planning workshop for the Board of Directors and key managers. Followed up with subsequent action plan for the Board.

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*Project and Cost Management*

Omaha Public Power District (OPPD) – Lead Consultant responsible for design and implementation of a cost management program for a major overhaul of the Fort Calhoun Station. This \$400 million project involved replacement of the two steam generators, pressurizer and reactor vessel head.

*Power Marketing, Procurement and Risk Management*

Public Service Commission of Maryland – Consultant supervising the various auctions for procurement of power for Maryland’s standard offer service (SOS) customers and support for the PSC in their analysis of new approaches to SOS supply.

Electricité de France – Supporting services for the implementation of a large trading and marketing alliance in Europe, including reporting and control processes and training workshops for employees.

SaskPower - Project Manager and Lead Consultant for the expansion of the bulk power marketing program and creation of an energy trading floor. Work included extensive recommendations on corporate structure, organization, trading and marketing strategies, trading floor characteristics, management controls, risk management strategies, training, alliance building and external interfaces.

Public Service Commission of Maryland – Provided consulting support to the PSC in the approval of the settlement agreement relating to Standard Offer Service (SOS).

*New Businesses*

BGE Corporation (Constellation Nuclear Services) – Project Manager and Lead Consultant for the business analysis, planning, design and startup of a new subsidiary business for the client. The business, provision of nuclear related services to U.S. and international utilities, was successfully started in July 1999.

Electricité de France – Provided support in the planning, analysis, structure and negotiation of a large international energy trading and marketing alliance (EDF Trading, based in London).

Tennessee Valley Public Power Association – Project Manager and Lead Consultant for a survey and analysis of the Association's more than 150 member utilities. Produced an analysis with recommendations for the products and services that can best serve the members in a deregulated environment.

Municipal Electric Association (Ontario) – Project Manager and Lead Consultant for the development of a definitive business plan for a new power procurement business on behalf of the Association's more than 250 municipal electric utilities. Work included initial feasibility assessments followed by a complete actionable plan for the creation of the new organization, including structure, organization, staffing, financing, market analysis, contingency plans, product offerings and promotional strategies. The resulting new company became a reality in late 1997.

ENERconnect (Ontario) – Served as interim Vice President of Marketing and Customer Service for the startup of this new power procurement and services company. Project Manager and Lead Consultant for the development of a detailed operational plan for startup. Assisted in all aspects of startup including organizational design, business strategies, product design and development and support to executive management and the Board.

ABB Energy Solution Partners – Consulting support for ESP-sponsored projects, including customer and project research, project structure, energy supply options, alliances and preparation of proposals. Included regulatory research and discussions in Nevada, Michigan, New Jersey and New York.

Ambient Corporation – Consulting support for strategic and tactical business planning for this startup firm specializing in power line communications (PLC), including development of commercialization plan and supporting management processes, support of business plan, product and service development, regulatory strategies and financing documentation.

PacifiCorp - Customer research with two groups of large industrial and commercial customers. Designed and managed interactive workshops to obtain their input, served as subject matter expert for the sessions, produced and presented comprehensive analyses of the results with strategic insights for the client's marketing initiatives.

#### *T&D Support*

Alberta Electric System Operator – Analysis of transmission loss methodologies for the Alberta market.

A Large Canadian Provincial Electric Utility - Business planning support for the transmission business unit. Analysis of the business potential of new transmission opportunities. Analysis of U.S. transmission policies and their potential impact on a Canadian player in the U.S. markets.

#### *Utility Management*

Pennsylvania Power & Light Company - Served in a variety of management positions in a long career with the utility. Responsible for strategic business planning, rates, bulk power marketing, system operation, management of non-utility generation contracts, rate design, market research

and contract negotiations with large customers. Key management roles in cost management, planning and scheduling for all Susquehanna nuclear station design, licensing, and startup activities including outage management.

### *Other Consulting Positions*

Senior Vice President for ABB Energy Consulting, responsible for managing consulting engagements for a variety of U.S. and European energy firms.

Principal for Navigant Consulting, Inc., involved in numerous consulting engagements serving the electric utility industry in competitive initiatives.

Senior Vice President for the Washington International Energy Group, responsible for the firm's competitive positioning practice.

### **Education**

M.S., Nuclear Engineering, Columbia University

B.E.E., cum laude, Villanova University

### **Registrations**

Registered Professional Engineer – Pennsylvania

### **Memberships**

Institute of Electrical and Electronics Engineers, American Nuclear Society

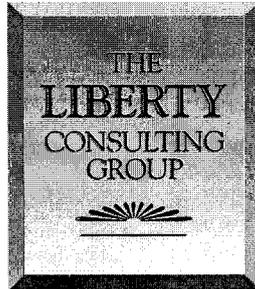
**Final Report  
Review of SWTC  
Operations and Prudence**

*Engineering Analysis*

Presented to the:

**Arizona Corporation Commission**

By:



**65 Main Street  
Quentin, Pennsylvania 17083**

**(717) 270-4500 (voice)  
(717) 270-0555 (facsimile)  
Admin@LibertyConsultingGroup.com (e-mail)**

**April 4, 2013**

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## I. Engineering Analysis

Liberty conducted an engineering analysis of the assets of Southwest Transmission Cooperative, Incorporated (“SWTC”). Our goal was to evaluate SWTC’s electric transmission service quality and maintenance practices. We reviewed existing maintenance practices, examined how SWTC documents them, and reviewed management controls to ensure proper implementation and execution of those practices. Liberty also reviewed outages on the transmission system. Liberty also conducted a review designed to determine the “used and useful” nature of rate-base assets. Liberty’s review included physical field inspections of SWTC facilities and interviews with the personnel responsible for managing them.

This report presents the results of Liberty’s review, categorized into the following subjects:

- Capital additions and rate base
- Operation and Maintenance
- Reliability
- Facility Review.

### A. Summary

As in our prior review in 2010, Liberty has found SWTC’s technical performance, its people and its facilities to be sound. The management team appeared knowledgeable, engaged, open, and supportive of Liberty’s evaluation. Considering the comparatively small size of the transmission cooperative’s operations and asset base, the organization appeared to have expertise and tools commensurate with the needs and challenges that SWTC faces.

#### 1. Capital Additions

New projects are often triggered by the individual needs of members, as opposed to general system needs. All projects require an extensive evaluation and justification process before SWTC commits to them. Although demand growth has collapsed in recent years, Liberty found no indication that any facilities were built prematurely or without substantial justification. Liberty concluded that all property placed in service should be considered “used and useful” for ratemaking purposes.

Cost performance in the management of capital projects is somewhat indeterminate because of what appears to be inadequate estimating practices. Projects are generally completed at well under budget, so much so as to question the validity of the budget estimates. This was not the case in our 2010 review.

#### 2. Operation and Maintenance

Maintenance practices conform to industry standards and SWTC employs a state-of-the-art maintenance management system. Relatively high scores were achieved in compliance audits.

Operating cost performance is difficult to judge in absolute terms because of the lack of benchmarks, which continues to be problematic. A minimal attempt at benchmarking took place in 2011, but was ineffective. From a trending perspective, cost growth appears to be both

---

contained and reasonable. Near term spending forecasts appear to be about \$2 million per year under previously established levels.

### **3. Reliability**

Reliability performance, although good, exhibits a large “human error” component consisting primarily of relaying issues. SWTC has taken several corrective steps in response to the problem.

### **4. Facility Review**

Liberty’s inspection of SWTC facilities included several recent additions to rate base. In all cases, the facilities are in good condition and functioning as expected.

### **5. Recommendations**

Based on SWTC’s largely well-managed operations, we do not offer any urgent recommendations. We recommend, however, that the following actions be considered for future improvements:

- The estimating process for large projects appears to have declined in effectiveness over the past few years. That process should be reviewed and improved to give estimates a suitably level of credibility to facilitate project management.
- There is a wealth of benchmarking data available via other utilities and utility-sponsored joint studies. Such data can be helpful in better understanding SWTC cost performance and expectations. The recent benchmarking attempt was focused on financial ratios, and did not address operating considerations. A new effort, focused on operating and maintenance costs and related to production, would be helpful for SWTC and those accountable for oversight of SWTC.
- The recent corrective measures to address human errors as a contributor to outages are sound. An SWTC analysis shows that such errors are a factor in about half of SWTC’s outages, with two-thirds of those relating to relay issues. The corrective measures are primarily aimed at improved relay coordination. While such steps are good, the magnitude of the issue deserves continued monitoring and analysis to assure these and future actions are producing real results.

## **B. Background**

The Arizona Electric Power Cooperative (“AEPSCO”) was founded in 1961. Through a major restructuring in 2001, AEPSCO was organized into three entities: 1) AEPSCO, as a power supply organization; 2) SWTC as the transmission entity for serving the needs of member cooperatives; and 3) Sierra Southwest Cooperative Services (“Sierra”), which provides services and personnel for both AEPSCO and SWTC. The enterprise now seems on the way back to a single entity structure.

In 2011, the Chief Operating Officer positions over each of the three organizations were eliminated. A new team of ten division managers has responsibility for each of the primary

operational functions. AEPCO indicates that this new structure and its implementing initiatives have “yielded a better alignment of resources with core functions by outsourcing certain services, reducing or reassigning staff, and improving processes and communications.” This new approach seems to be functioning well as it applies to SWTC.

## C. Capital Additions and Rate Base

### 1. The Planning Process

The Southwest Area Transmission (“SWAT”) planning group and its various subcommittees coordinate sub-regional planning. SWTC participates in the SWAT planning process. SWTC also participates actively with various subcommittees of the Western Electricity Coordination Council (“WECC”).

SWTC is also an active participant in WestConnect. It is one of the twelve original signatories to the WestConnect Project Agreement for Sub-regional Transmission Planning. WestConnect is a voluntary group that formed to coordinate transmission planning with the intention of creating an economic path on a non-firm basis. The objective is to eliminate pancaking by charging only the highest rate along the path (losses continue to be pancaked).

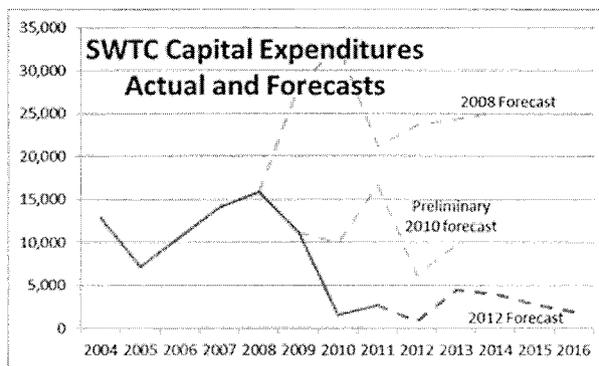
SWTC operates under a formal internal planning process that meets RUS requirements. An SWTC Transmission Planning group evaluates system needs, and determines future facility requirements. In accordance with RUS requirements, SWTC completes a “Capital Project Analysis” form that provides a justification for all new facilities. These three to five page analyses offer a summary of the technical and economic factors surrounding proposed projects. In addition, alternates to the proposed project, including “do nothing,” are presented.

New construction falls into one of two categories: system or direct assignment. The latter covers improvements made specifically for the benefit of a particular member, who bears all of the costs. System improvements benefit all members; therefore, all share in the costs.

### 2. Capital Budget

In our last review, we reported a drastic cutback in anticipated capital investment from the \$25 million per year level to less than half that. The current review sees yet another halving of the outlook, with expected expenditures now below \$5 million per year.

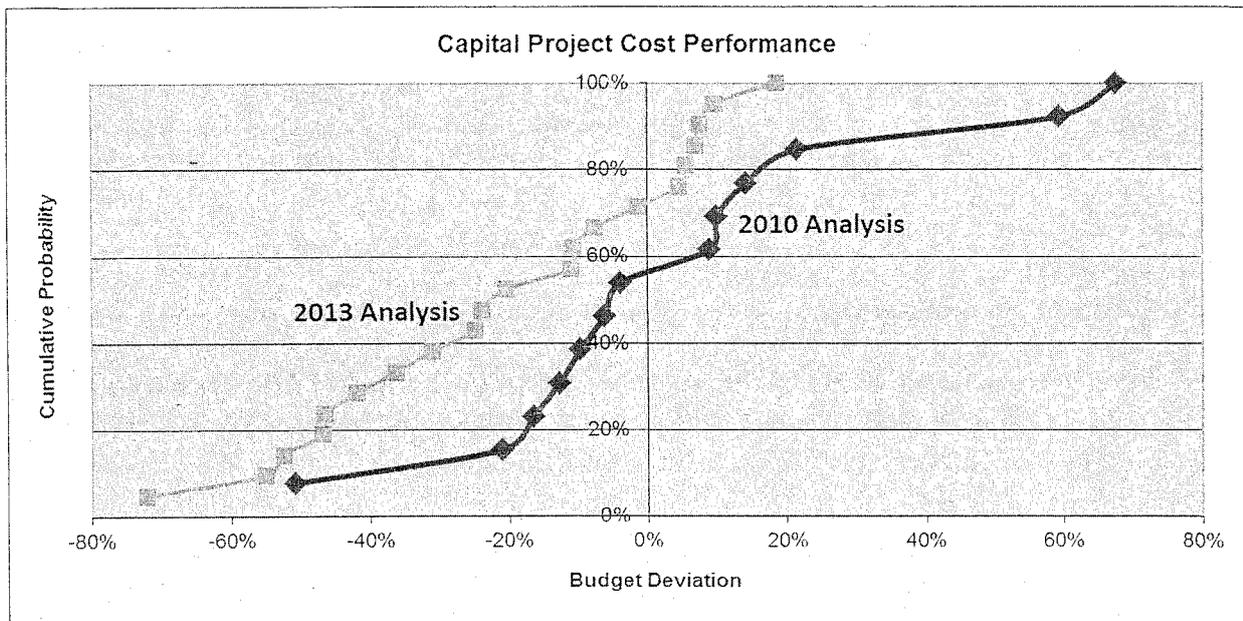
The accompanying chart illustrates the rapidly declining outlook. SWTC advises that it is seeking to remain revenue neutral on any new capital spending, which means that capital spending should not exceed depreciation. However, it is also clear that the need for new facilities on the part of the members simply is not there.



RM-13

As might be expected by the magnitude of the decline, there are multiple underlying reasons. The extreme levels of load growth in the region appear to be a thing of the past, at least for the foreseeable future. The loss of the 100 MW sale to Salt River Project has also decreased transmission needs. Finally, efficiencies from reserve sharing have lessened the need for new capacity. This has all led to levels of planned spending that are so low that one would tend to question their sufficiency rather than their justification. We found no reason to question the sufficiency of the program. (See further discussion under “aging infrastructure” below.

With respect to management of construction, SWTC uses a project management approach. It reports projects to be typically under budget. The chart below shows the distribution of budget deviations across the 21 projects with a budget of \$250,000 or greater. The contrast to our prior study is remarkable. The prior study is centered near zero (actually a median value of a 4 percent under-run), as one would expect; but the new data exhibits a median of a 20 percent under-run and a 28 percent average under-run. This is a clear indication of “fat” estimates. While generous estimates are often used as a contingency tool when seeking funding, the extremes demonstrated here are, in our experience, unusual.



RM-17

In order to manage projects effectively, one must have a “standard” upon which to evaluate. Ordinarily, the standard is the budget. In the current case of SWTC projects, however, the standard does not appear to be valid. This begs the question as to how management and the Board are measuring performance and providing effective oversight of operations. An additional question is “what has changed in three years to produce such a remarkable change in the quality of SWTC capital estimates?”

### 3. New Facilities

Liberty specifically reviewed major (>\$500,000) new facilities being added to rate base. Many of the new facilities reported by SWTC in response to information requests were previously reviewed in the prior rate case. The accompanying table shades these projects. New projects on the list amount to \$16,450,000.

New Additions to Rate Base (>\$500,000) in the Last 5 Years			
In Service	Asset	Cost (\$1,000)	Need
2009	Anza System Upgrade at Nelson DAF	665	Serve short-term load growth of Anza Electric Cooperative
2007	Apache Sub Transformer Replacement	2,073	Replace transformers due to combustion gas buildup
2011	Bicknell Sub 115/25KV Transf Upgrade DAF	2,232	Increased load growth of Trico Electric Cooperative
2011	Bicknell Sub 230/115KV Transformer Upgrade	3,140	Add a second 100 MVA transformer due to overload conditions
2009	Upgrades to Dos Condados Substation	748	Replace outdated equipment
2010	EMS Upgrade Started in 2005	2,051	Modernization of the system (ineligible for RUS funding)
2007	Hackberry Substation and Line Tap	2,320	Required to serve the Phelps Dodge Safford Mine.
2009	Hackberry to Thatcher 69kv Line	5,405	Maintain reliability to customers in Graham County. This line to the new Hackberry Sub avoids construction of a new substation.
2009	Kartchner Substation	1,001	Replace 50 MVA transformer with 100 due to load growth
2009	Palo Verde to Pinal West Line (Pinal West Project)	2,353	Provides increased import / export capability and particularly enhanced access to Palo Verde.
2011	Parker Bagdad Reroute	588	The ground was subsiding around some of the structures on this line.
2009	Pinal West 500kv Switchyard (Pinal West Project)	1,316	Increased import and export capability
2009	Pinal West Substation	4,723	Associated with the participation in the connection of the 500kV line from Palo Verde to the 345kV TEP Westwing to Vail line.
2011	Rivera 69KV Panels Upgrade	560	Replace outdated equipment
2008	Saddlebrooke Ranch Substation DAF	3,815	Requested by Trico Electric Cooperative
2009	Westwing Transformer Relocation (TEP)	2,959	Relocate due to fire
<p>Shaded entries were reviewed in the prior rate case DAF = direct assignment facility - costs assigned to the benefitting customer</p>			

RM:11 and 12

Liberty's review consisted of: a) a study of the SWTC documents which justified the projects (the Capital Project Analysis sheets), b) discussions with the SWTC team, reviewing the details of the projects, their genesis, need, objectives and execution, and c) a physical inspection of selected facilities.

Classification of New Rate Base Items (\$>500,000)		
	Number of Projects	Cost
DAF Projects	3	6,712
Modernization - equipment replacement	4	5,432
System capability	1	1,316
Miscellaneous	1	2,989
Total	9	16,449

The accompanying table illustrates that the recent construction program has been minimal, with only one project aimed at expansion of system capabilities. The DAF projects do expand system capabilities, but these are limited to single customers, are completed upon request of a customer, and

their full cost is borne by the customer. The bulk of the work has addressed outdated equipment issues and represents necessary modernization of infrastructure.

The precipitous drop in perceived needs raises the question as to the used and useful nature of new assets caught in the middle, between the time when forecasts would justify such investments and the realization of sharply lower forecasted needs. The minimal size of the program, and its concentration on DAF and modernization projects, as opposed to system expansion and load growth, eliminates such concerns. We therefore conclude that the proposed changes to rate base are justified, are appropriate and are indeed used and useful.

#### 4. Aging Infrastructure

Aging infrastructure is a nationwide issue among T&D companies with the result that spending on modernization and new facilities has increased considerably in recent years. Accordingly, we would ordinarily be concerned by the low forecasted rate of spending at SWTC in that it is contrary to industry trends, and we believe those increased industry spending trends are necessary and appropriate.

However, the aging infrastructure argument legitimately carries far less weight as applied to SWTC. While many utilities have fallen behind, and are in a “catch-up” mode with respect to infrastructure, SWTC is not. In fact, even if current investments were too low, it would take many years of such under-investment to reduce SWTC to the troubled state of some other utilities. We therefore do not see the low level of current spending, and the forecasted lower amounts in the immediate years ahead, as a problem. This is nevertheless a subject for which management should be vigilant, less the pursuit of more competitive near-term rates lead to unintended long-term consequences.

An outside firm completed a “Comprehensive Depreciation Study” for SWTC in June 2012. That study included an engineering assessment of the facilities and reported positive findings on the state of SWTC infrastructure. While we generally are skeptical of such studies due to over-limiting qualifications applied to their forecasts and conclusions, we have no basis to disagree with the findings as they apply to the quality of SWTC infrastructure or the capability of the infrastructure to serve its function in the long-term.

## D. Operation and Maintenance

### 1. Cost

An examination of SWTC operating and maintenance (“O&M”) costs yields a bottom line consistent with stated strategy. Specifically we see a correction from what appears to be a spike in spending in about 2009 to return to a level more typical of past trends. Furthermore, the forecast trend going forward appears reasonable.

The breakdown between O&M costs also appears reasonable, although the 2008 forecasts were, in retrospect, out of line, especially the maintenance forecast. On balance, current forecasts are about \$2 million per year less than the prior forecasts, a significant improvement considering the limited size of the budget.

Our prior cost review found a lack of benchmarking data that, if available, would help evaluate the appropriateness of O&M.

Such data is widely available in the industry through cooperating utilities. SWTC reported that it did indeed participate in such a group in 2011 and compared certain financial data. The data we received was not of substantial value in benchmarking or performance measurement, and seemed to have been appropriately disregarded as irrelevant by the organization. The organizational reaction regarding the corresponding power plant data was identical.

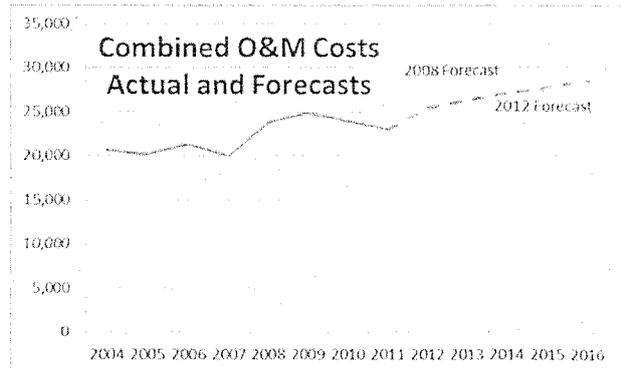
Because there remains no standard against which to judge O&M spending and overall cost performance, we reiterate our prior suggestion that SWTC seek such data.

### 2. Processes and Systems

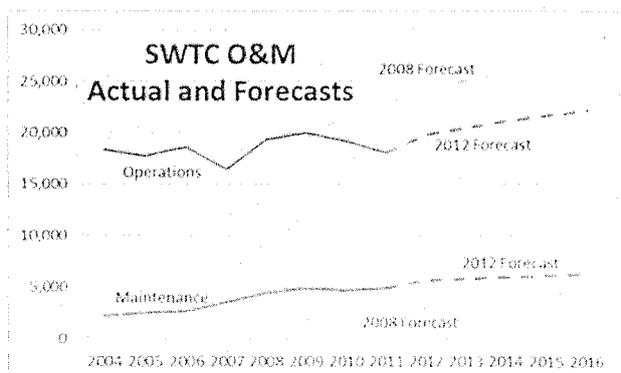
We again reviewed the systems and processes now in place at SWTC and found that our prior positive assessment remains valid. The following reiterates our prior conclusions.

SWTC has implemented an approach to maintenance that is consistent with its size and that is effective. The cooperative has struck a good balance between the sophistication of management systems and the recognition that a smaller network simply does not require the same degree of rigor in its approach.

This is not to suggest that SWTC lags behind others in a material way. To the contrary, the SAP systems that SWTC uses for maintenance are notable, as is much of the technology used in



RM-15



RM-13

facilities. Liberty simply observes that management has correctly avoided going overboard and has crafted systems and approaches that are fully consistent with SWTC's size and needs.

Liberty reviewed SWTC's general approach to maintenance management, procedures, controls and compliance. The management of maintenance is highlighted by the SAP module designated as the Computerized Maintenance System. The software performs scheduling, record keeping, reporting, inventory control, purchasing, and cost tracking. Several years were required to bring the system to its current state.

SWTC operations and restoration have been facilitated by a new Substation Networking Project. Remote terminal units allow personnel to access substation data from their desks or other remote locations.

As required by NERC, SWTC has been audited for compliance with various standards. An extensive audit in 2012 uncovered only one (self-reported) violation, which resulted in a \$25,000 penalty. Of 115 requirements assessed, there were no areas of concern or recommendations.

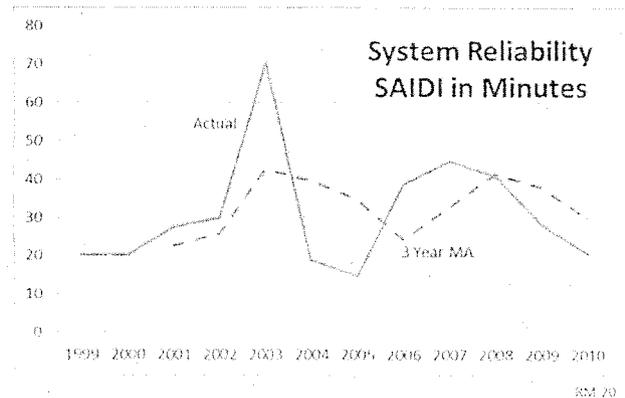
### 3. Balancing Reliability and Maintenance

Liberty again addressed the degree to which maintenance is optimized for its impact on reliability. Although SWTC regularly reports reliability results, there is no attempt to correlate past spending with performance or to stress reliability as a driver of future costs.

#### E. System Reliability

The "new" data provided by SWTC add little to what we analyzed in our prior review. Although we requested reliability statistics from the past ten years, we were only able to obtain data up to 2010, and that was qualified as an estimate in part. Our prior study covered through 2009; therefore, the new data are not helpful. Nevertheless, it is illustrated on the accompanying chart.

SAIDI, or System Average Interruption Duration Index, measures the sum of all customer outage minutes divided by the number of customers on the system. It is therefore equivalent to the number of minutes the average customer is out of service in a year. For end-use customers that are a part of the SWTC system, the SWTC value would be added to the corresponding distribution cooperative's SAIDI to arrive at a total number of minutes out of service.

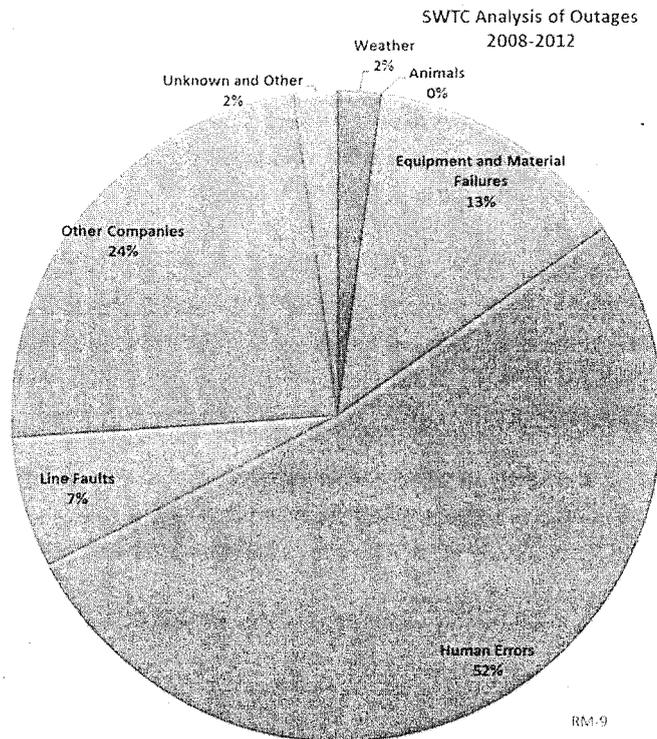


SWTC does not benchmark reliability against others, but reports that RUS has assigned a "satisfactory" rating to them for every year since 1997, with "satisfactory" being the best rating.

After being largely ignored by the industry for the last ten years, there seems to be some limited acknowledgement that reliability in the U.S. has been declining for some time. This is a result of

diminished infrastructure spending in recent decades, and it is likely that it will take some time to catch up and reverse the reliability trend. However, no such trend is visible at SWTC, at least through 2010, which is consistent with the infrastructure assessment discussed earlier. Given the reductions in investment being implemented by SWTC, it will be important to continuously monitor reliability trends to provide for the earliest possible warning of degradation.

Our prior report provided a detailed assessment of outage causes. During this review, SWTC provided such an analysis, using more refined techniques to reveal the less visible causes behind the various formal outage classifications. The adjacent pie chart illustrates the results, as calculated by SWTC.



The SWTC analysis suggests that about half of all outages have a human error component. Our prior analysis had ascribed about 20 percent of outages (14 percent of customer-hours) to that cause. We felt that SWTC could improve such results. The result in the current analysis is therefore surprising, even though the comparison is not fair in that the SWTC analysis is finer than conducted by Liberty in 2010.

Nevertheless, we examined the next level of detail with the results shown on the table below.

Human Error Outages - Sub-categories		
Sub-category	Number of Outages	% of HE Outages
Relay Setting/Design	38	67%
Construction Related	11	19%
Technician /Maintenance	6	11%
System Control/Switching	2	4%
All "human error" outages	57	100%

Relay issues account for fully two-thirds of the outages, a remarkable result. Fortunately, SWTC has launched major corrective steps aimed specifically at this issue:

- An engineering position has been established, with the primary function of developing protective relaying settings and conducting relay coordination studies. Such studies provide for coordinated tripping schemes that minimize the number of customers who lose service in an event.

- A Protective Relaying Committee is being developed, administered by the Protection Engineer, for the purpose of optimizing and standardizing relay schemes and settings.

One would expect to see substantially improved outage statistics in the future as a result of such initiatives.

## **F. Facility Review**

Liberty visited a number of SWTC facilities, including several of these now being added to rate base. This physical review included:

- Hackberry Substation and Line Tap
- Hackberry to Thatcher 69kv Line
- Dos Candados Substation
- Apache Transformers.

General support facilities visited in our last review which were not repeated this time include:

- The System Operating center at the Benson headquarters
- The SWTC warehouse facilities at the Benson headquarters.

These visits were conducted with the guidance of SWTC management, who were helpful and answered all questions to Liberty's satisfaction. Liberty found the facilities, whether old or new, to be in good shape. The grounds were clean and secure.

All equipment appeared to be well maintained, exhibiting no visible signs of unusual wear and tear or lack of maintenance. Control houses were efficiently laid out and SWTC's remote communications system, as discussed above, was in place and functional.