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MEMORANDUM

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AZ CORP COMMISSION
DOCKET CONTROL

Arizona Corporation Commission
DOCKETED
MAR 16 2010
DOCKETED BY

TO: THE COMMISSION

FROM: Utilities Division

DATE: March 16, 2010

RE: DUNCAN VALLEY ELECTRIC COOPERATIVE, INC. – APPLICATION FOR APPROVAL OF A TARIFF FOR SINGLE PHASE TOU SERVICE (DOCKET NO. E-01703A-09-0040)

On February 2, 2009, Duncan Valley Electric Cooperative, Inc. ("Duncan Valley", "DVEC", "Applicant" or "Cooperative") filed an Application ("Application") for authorization to provide Time-of-Use ("TOU") service to its Arizona single phase customers. The application was filed pursuant to Decision No. 69736 (July 30, 2007) which required that "Within 18 months of Commission adoption of this standard, each electric distribution utility shall offer to appropriate customer classes, and provide individual customers upon customer request, a time-based rate schedule under which the rate charged by the electric utility varies during different time periods and reflects the variance, if any, in the utility's costs of generating and purchasing electricity at the wholesale level."[1]

The Cooperative's TOU rates, as proposed, would initially only be available to single phase residential customers. Duncan Valley's primary reason for initially limiting its proposed TOU rates to residential members is that the Cooperative has not determined the costs or feasibility of offering TOU rate options to its non-residential single phase customers. Staff will address this matter in more detail under its Findings.

Staff's Findings

Duncan Valley currently provides electric service to approximately 2,031 members in Arizona, of which approximately 1,918 (94 percent) are single phase customers. Arizona single phase residential members represent nearly 91 percent (1,740/1,918) of Duncan Valley's total Arizona single phase customers.

The Cooperative's filing and responses to Staff's data requests are summarized as follows: 1) at this time, Duncan Valley has not conducted cost of service or feasibility studies in support of its proposed TOU tariff; 2) the Cooperative relied on its existing rate structure and power costs, as well as TOU filings by similar cooperatives such as Trico Electric Cooperative ("Trico") to develop its proposed TOU rates and time periods; 3) the Cooperative believes that the usage patterns of Trico's members are similar to its customers' usage patterns, and as such, feels comfortable recommending a 70 percent off-peak and 30 percent on-peak usage ratio; 4)

[1] Docket No. E-00000A-06-0038, P. 7, lines 6-9

the majority of Duncan Valley's customers do not have meters that register and produce a record of hourly usage; 5) the Cooperative has concluded that the variation in non-residential single phase customers' usage is significantly higher than residential customers' usage variations, and has therefore recommended excluding non-residential single phase customers from TOU options at this time; 6) Duncan Valley's purchase power rates are not time differentiated at the wholesale level, consequently there are no energy-related cost savings available to pass on to its retail members; and, 7) load and coincident peak data were not filed in support of the proposed on-peak and off-peak hours, because the Cooperative believes that it is appropriate to use Trico's peak periods and days as models to develop their respective TOU periods. Staff notes that both DVEC and Trico (at the time of filing this application) buy all of their power from Arizona Electric Power Cooperative ("AEPCO") and pay a demand charge based on their demands at the time of AEPCO's monthly coincident peak.

The following summary table was developed by Staff to compare Duncan Valley's existing and proposed rates; and, DVEC's proposed TOU time periods with time periods recently approved for Trico in Decision No. 71253:

RESIDENTIAL RATE CLASS

Table I	**Existing**	**Proposed**		**Existing**
[A]	[B]	[C]		[D]
	Duncan Valley (Non TOU Rates & Hours)	Duncan Valley (TOU Rates & Hours)		Trico Electric* (TOU Hours)
Customer Charge	$20.00	$30.00 ($20 System+$10 Meter)		
On-Peak per kWh	$0.07520	$0.20500		
Off-Peak per kWh	$0.07520	$0.06000		
Summer Months	April-October	April-October		April-October
Summer On-Peak Hours (Remaining hours are Off-Peak hours)	All kWh (Every Day)	1 p.m. to 7 p.m. (Every Day)		1 p.m. to 9 p.m. (Monday-Friday)
Winter Months	November-March	November-March		November-March
Winter On-Peak Hours (Remaining hours are Off-Peak hours)	All kWh (Every Day)	6 a.m. to 9 a.m. and 6 p.m. to 9 p.m. (Every Day)		6 a.m. to 10 a.m. and 6 p.m. to 10 p.m. (Monday-Friday)
Estimated Annual On-Peak Hours		2,190		2,032

*Decision No. 71253 issued September 2, 2009. Off-Peak hours include the following holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day.

Based on information contained in Table I, Staff concluded that: 1) the Cooperative's proposed monthly Customer Charge in the amount of $30.00 is unsupported in the Application, and would represent an incremental increase of $10.00 per month (50 percent); 2) Duncan

Valley's proposed annual on-peak hours exceed Trico's annual on-peak hours by 158 hours (2,190 – 2,032); and, 3) DVEC's proposed on-peak hours would include all weekends and holidays.

Staff's discovery also led to the following additional findings: 1) Duncan Valley's filing was made pursuant to Commission Decision No. 69736, dated July 30, 2007, and as such, the Cooperative is also required to "... investigate the feasibility and cost-effectiveness of implementing advanced metering infrastructure for its service territory and shall begin implementing the technology if feasible and cost-effective."[2]; 2) the approved base cost of power must be taken into consideration before finalizing rate design; and, 3) Duncan Valley's proposal to exclude non-residential single phase TOU customers from proposed Single Phase Time of Use schedule ("SPTOU") is not supported by Staff.

Single Phase Customers

Typically, utilities establish rate classes based on type of user; for example: Residential, Small Commercial and Industrial use customers. DVEC has established rate classes that are determined by the nature of the electric service delivered, such as single phase. The single phase rate schedule serves residential and commercial customers who receive power from transformers rated at 15 kVA or less. Single phase capacity accommodates the power needs of nearly all residential and small commercial customers. Normally, only customers with large motors (nominally greater than 10 Horse Power) or air conditioners (nominally greater than 10 Tons) require three phase service.

Staff does not support excluding non-residential single phase customers from the proposed Schedule SPTOU. Duncan Valley's primary reason for requesting the exclusion is that the Cooperative has not developed data to identify the usage patterns or TOU-related costs associated with its small commercial customers. Staff believes that the number of residential customers (1,740) compared to the number of small commercial customers (120) justifies establishing rates, terms and conditions based on the residential class, because the small commercial's impact on the TOU coincident peak is not likely to be significant. Furthermore, any necessary adjustments to the proposed Schedule SPTOU rates, terms and conditions can take place at the end of a one-year experimental pilot period as discussed below.

Energy Rates

Although Duncan Valley opted to rely on TOU rates filed by other cooperatives having similar usage patterns, Duncan Valley did not recommend TOU energy rates that have similar on-peak to off-peak rate ratios. Table II illustrates the derivation of rate ratios.

[2] Decision No. 69736, p. 7, lines 11-12

Table II **TOU RATES PER KWH AND RESULTANT RATE RATIOS**

	Duncan Valley Proposed	Trico Existing	Staff Proposed*
A) On-Peak	$0.20500/kWh	$0.19320/kWh	$0.10377/kWh
B) Off-Peak	$0.06000/kWh	$0.07320/kWh	$0.05843/kWh
C) Ratios (A/B)	3.42	2.64	1.78

*Attachment 3, Part I

Duncan Valley's proposed TOU energy rates would create a rate ratio of approximately 3.42, compared to Trico's rate ratio of approximately 2.64 and Staff's proposed rate ratio of approximately 1.78. DVEC's proposed ratio is nearly 30 percent higher than Trico's existing rate ratio and approximately 92 percent above Staff's proposed rate ratio.

Staff is concerned about energy ratios because the higher they are compared to the rate ratio of a referenced model, the more unlikely such rates will encourage customers to sign-up for TOU rates as a way to reduce their monthly electric bills. One reason for this likelihood is that prospective TOU customers are seeking balanced TOU rates that provide "reasonable incentives" to move kWh usage to off-peak hours. Although it is nearly impossible to draft a definition that nearly everyone will agree to, most ratepayers agree that rewards (i.e. lower off-peak rates) should be reasonably balanced with potential penalties (i.e., reasonably higher on-peak rates). If a TOU on-peak rate is too severe, customers will opt out rather than expose themselves to a perceived severe financial risk.

Attachment 3, Part III illustrates the $/kWh impact on Duncan Valley's and Staff's proposed TOU rates. A general summary of TOU rates is that an increasing rate ratio is highly correlated (99.56 percent; Attachment 3, Part II) with higher on-peak rates (penalties) that are skewed upward more than off-peak rates (rewards) have been lowered. The following excerpt from Attachment 1 illustrates this point from a different perspective.

Table III **RESIDENTIAL BILL COMPARISONS***

kWh Monthly Usage Level	Monthly kWh	Duncan Valley Current Rates	Duncan Valley Proposed TOU Rates	Duncan Valley Monthly Savings	Staff Proposed TOU Rates	Staff Monthly Savings
Low Usage	250	$38.80	$55.88	($17.08)	$40.36	($1.56)
Average Usage	743	$75.87	$106.90	($31.03)	$75.87	$0.00
Median Usage	1,875	$161.00	$224.06	($63.06)	$157.41	$3.59
High Usage	3,500	$283.20	$392.25	($109.05)	$274.46	$8.74

*Based on 70 percent usage being off-peak

At an average usage of 743 kWh per month (based on 2008 annual report data), Duncan Valley's proposed TOU rates would cost residential TOU members approximately $31 more per month (Attachment 1, Column D), compared to no additional cost under Staff's proposed rates (Attachment 1, Column H). In response to a Staff-initiated data request, on November 24, 2009,

Duncan Valley recognized the "negative" outcome of its proposed rates and requested permission to withdraw and re-file its proposed TOU rates as part of its next rate case. Staff does not support allowing the Cooperative to withdraw its proposed TOU rates, because as Staff's Attachment 1 illustrates, TOU rates designed with more appropriate lower rate ratios produce monthly savings or losses that are significantly less extreme compared to existing non-TOU rates.

Regarding the 70 percent off-peak usage parameter, Staff believes that a 70 percent off-peak and 30 percent on-peak kWh usage ratio is a reasonable rate design parameter for Duncan Valley's single phase TOU customers. For example, Trico's actual residential TOU kWh usage as filed in its latest rate case was 71 percent off-peak and 29 percent on-peak (Docket No. E-01461A-08-0430, Schedule F-5.2, p. 4).

The following table summarizes the sensitivity of rates proposed by Staff under different off and on-peak kWh usage ratios. The impact on customers' monthly billings is fairly modest (under $8/3 percent) at the given usage ratios.

TABLE IV SENSITIVITY TO DIFFERENT OFF AND ON-PEAK USAGE RATIOS

kWh Monthly Usage Level	Monthly kWh	+/- Deviation From Base Case Monthly Bill	Monthly Bill Under Staff's Proposed Rates @ 75/25	Monthly Bill Under Staff's Proposed Rates @ 70/30 *	Monthly Bill Under Staff's Proposed Rates @ 65/35
Low Usage	250	$0.57/1.41%	39.79	$40.36	40.92
Average Usage	743	$1.68/2.21%	$74.19	$75.87	$77.55
Median Usage	1,875	$4.25/2.70%	$153.16	$157.41	$161.66
High Usage	3,500	$7.93/2.89%	$266.53	$274.46	$282.40

* Base Case

Attachment 2 contains the derivation of the $0.05843 per kWh off-peak and $0.10377 per kWh on-peak rates. These rates are based upon a rate ratio of 1.78 as derived in Table II. Proposed TOU rates must also support the existing approved base cost of power rate. Attachment 3, Part I begins with the existing base cost of power in the amount of $0.05843 per kWh. Placing the off-peak rate at this level allowed Staff to develop an on-peak rate that produces a revenue neutral on and off-peak combination and a desirable rate ratio of 1.78. As discussed above, it is important to send the right price signals by "right sizing" the perceived "penalty" for using on-peak energy. Attachment 3, Part III illustrates the impact of different rate ratios on reward and penalty TOU rates.

Customer Charge

Regarding the Cooperative's proposed monthly Customer Charge in the amount of $30.00, Staff elected to base its rate design on a $22.35 Customer Charge, which reflects an increase of $2.35 per month. The $2.35 incremental rate is designed to cover the incremental carrying costs associated with the purchase and installation of single phase time-based meters. There are no incremental billing-related costs because, initially, existing employees will manually prepare TOU billings. Staff received cost data that are supported by Form 7, 2009

entries and produce an approximate incremental cost in the amount of $274 per meter. The annualized carrying costs (10.26 percent) produce an annualized, incremental monthly carrying cost in the amount of approximately $2.35 ($274 x 10.26% ÷ 12). Staff recommends approval of its proposed $22.35 Customer Charge.

Experimental One-Year Pilot Period

Staff believes that TOU rates approved in this docket should be offered to Duncan Valley's single phase customers as an experimental, optional TOU rate alternative. This approach gives the Applicant and Commission more flexibility to adjust rates, terms and conditions during a transition period from Non-TOU rates to optional TOU rates. Staff believes that a one-year "pilot" period would be sufficient to identify, but not be limited to, the pros and cons of TOU rates for Duncan Valley's single phase customers, level of customer participation, customer savings or losses, impact on DVEC demand costs, operations and revenues; and, make comparisons between the TOU and net-metering programs.

At the end of the pilot period, estimated by Staff to be approximately May 3, 2011, Staff recommends that DVEC present its summary findings and recommendations to the Commission for review. If Duncan Valley files a rate case during the pilot period, Staff recommends that existing TOU rate options be incorporated into the rate case for consideration by the Commission. Under either scenario, Staff recommends that Schedule SPTOU would remain in effect until acted upon by the Commission.

Fair Value Considerations

Staff has considered the proposed equipment charges (included in the $22.35 monthly customer charge) in terms of fair value implications. In Decision No. 67433, issued on December 3, 2004, the Commission determined the fair value of Duncan Valley's property to be $2,972,556. According to more recent information provided by Duncan Valley, as of December 31, 2009, the estimated value of Duncan Valley's plant is $3,195,508. Although Staff considered this information, the proposed equipment charges on Schedule SPTOU would have no significant impact on the Cooperative's revenue, fair value rate base, or rate of return, because these charges are cost-based and relatively limited in scope.

Summary of Recommendations

Based on information contained in the Application and developed through discovery, Staff makes the following recommendations in this docket:

A. Staff recommends that Schedule SPTOU be approved as an experimental one-year pilot with Staff's proposed rates.

B. In the absence of empirical data, Staff recommends the adoption of the currently approved Trico Electric's TOU hours, days, months and holidays as approved in Decision No. 71253, and as summarized in Table I, Column D.

C. Within 90 days of the Commission's Decision in this matter, Staff recommends that Duncan Valley be required to docket empirical data that support its decision to not install an advanced metering infrastructure as required by Decision No. 69736.

D. Within 30 days of the Commission's Decision in this matter, Staff recommends that Duncan Valley be required to docket data that identify its 2009 monthly coincident and non-coincident power peaks (kW), and identify the times, dates and weekdays of the peaks.

E. Staff recommends that Duncan Valley be ordered to file a revised Schedule SPTOU in compliance with the Decision in this matter within 15 days of the effective date of the Decision.

Steven M. Olea
Director
Utilities Division

SMO:WHM:lhm\CH

ORIGINATOR: William Musgrove

Staff Proposed Residential TOU* Rates Compared to Duncan Valley's Current Rates and Proposed TOU Rates

2009 RESIDENTIAL/SINGLE PHASE RATE SCHEDULE COMPARISON**

		Duncan Current Rate Schedule	Duncan-Proposed 70% Off-Peak TOU Rate	Savings in $	Savings in %	Duncan Current Rate Schedule	Staff-Proposed 70% Off-Peak TOU Rate	Savings in $	Savings in %
Off-Peak Usage			70%				70%		
On-Peak Usage			30%				30%		
Monthly Service Charge		$20.00	$30.00			$20.00	$22.35		
Per kWh Rate		$0.07520	$0.06000			$0.07520	$0.05843		
Per kWh Rate On-Peak			$0.20500				$0.10377		
PPAM Rates as of 8-09 to 9-09		0				0			
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)
Monthly kWh	kWh								
Residential Bill Using kWh of	250	38.80	55.88	(17.08)	-44.01%	38.80	40.36	(1.56)	-4.02%
Residential Bill Using kWh of	500	57.60	81.75	(24.15)	-41.93%	57.60	58.37	(0.77)	-1.33%
Residential Bill @ Average kWh of	743	75.87	106.90	(31.03)	-40.89%	75.87	75.87	0.00	0.00%
Residential Bill Using kWh of	750	76.40	107.63	(31.23)	-40.87%	76.40	76.37	0.03	0.03%
Residential Bill Using kWh of	1000	95.20	133.50	(38.30)	-40.23%	95.20	94.38	0.82	0.86%
Residential Bill Using kWh of	1250	114.00	159.38	(45.38)	-39.80%	114.00	112.39	1.61	1.41%
Residential Bill Using kWh of	1500	132.80	185.25	(52.45)	-39.50%	132.80	130.40	2.40	1.81%
Residential Bill Using kWh of	1750	151.60	211.13	(59.53)	-39.26%	151.60	148.41	3.19	2.11%
Median of Given Bill Count Range	1875	161.00	224.06	(63.06)	-39.17%	161.00	157.41	3.59	2.23%
Residential Bill Using kWh of	2000	170.40	237.00	(66.60)	-39.08%	170.40	166.41	3.99	2.34%
Residential Bill Using kWh of	2250	189.20	262.88	(73.68)	-38.94%	189.20	184.42	4.78	2.53%
Residential Bill Using kWh of	2500	208.00	288.75	(80.75)	-38.82%	208.00	202.43	5.57	2.68%
Residential Bill Using kWh of	2750	226.80	314.63	(87.83)	-38.72%	226.80	220.44	6.36	2.81%
Residential Bill Using kWh of	3000	245.60	340.50	(94.90)	-38.64%	245.60	238.45	7.15	2.91%
Residential Bill Using kWh of	3250	264.40	366.38	(101.98)	-38.57%	264.40	256.45	7.95	3.01%
Residential Bill Using kWh of	3500	283.20	392.25	(109.05)	-38.51%	283.20	274.46	8.74	3.09%

* Time-of-Use

** NOTE: These rates do not include sales taxes, REST Surcharges and PPAM rates.

Staff Proposed Residential Time-of-Use Rate Design for Duncan Valley Electric Cooperative, Inc.

Revenue Neutral Rate Design Based On Average kWh Usage and a Staff-Derived Rate Ratio (Attachment 3, Part I)

A. Given:

1. x = Off-Peak Rate or kWh; y = On-Peak Rate or kWh
2. Average y/x Rate Ratio = 1.77593 (therefore y = 1.77593x)
3. xkWh = 70%
4. ykWh = 30%
5. Monthly Customer Charge = $22.35 vs. $30.00 proposed by Duncan Valley

B. Proposed Rate Design (Average Residential Monthly kWh = 743):

520	x	+	223	y	=	[$75.87-	$22.35]		
520	x	+	223	1.77593	x	=	$	53.52	
520	x	+		395.85480	x	=	$	53.52	
				915.95480	x	=	$	53.52	
					x	=	$	0.05843	per kWh
				and therefore	y	=	$	0.10377	per kWh

C. Proof:

520	x	$ 0.05843	+	223	x	$ 0.10377	=	$	53.52

D. Weighted Average:

Off-Peak	$ 0.05843	@	70%	=	$0.04090	
On-Peak	$ 0.10377	@	30%	=	$0.03113	
Sum					$0.07203	per kWh

Staff Recommended Rates, Rate Correlations and Reward/Penalty Values

Part I: Staff Recommended TOU Rates and Resultant Rate Ratio

	Input Ratios	Input Rates
	↓	↓
Off-Peak	70%	0.05843
On-Peak	30%	0.10377
Rate Ratio		1.77593

Input Cust Chg ↓ $22.35

Input Total Bill $ * ↓

kWh	Energy	Cust Chg & Energy	Target	Savings
250	$ 18.01	$ 40.36	$ 38.80	$ (1.56)
500	$ 36.02	$ 58.37	$ 57.60	$ (0.77)
743	$ 53.52	$ 75.87	$ 75.87	$ 0.00
750	$ 54.02	$ 76.37	$ 76.40	$ 0.03
1000	$ 72.03	$ 94.38	$ 95.20	$ 0.82
3500	$ 252.11	$ 274.46	$ 283.20	$ 8.74

* from Attachment 1, Column (B)

Part II: Correlation Of Rate Ratios and Resultant Revenue Neutral Rates

Parameters For Rate Ratios	Rate Ratios	Energy Rates** Off-Peak $/kWh	Energy Rates** On-Peak $/kWh
Staff Recommended (Part I above)	1.77593	0.05843	0.10377
Trico (Table II)	2.63934	0.04829	0.12744
Duncan Valley (Table II)	3.41667	0.04176	0.14267
Correlation		-99.56%	99.56%
Correlation Squared		99.12%	99.11%

** derived from Part I of Attachment 2 using Given Rate Ratios

Part III: TOU Rate ($/kWh) Rewards And Penalties

	(A)	Off-Peak $/KwH	Off-Peak $/KwH	Off-Peak $/KwH	On-Peak $/kWh	On-Peak $/kWh	On-Peak $/kWh
Existing Non-TOU Rate =	$0.07520	(B)=(C)/(A) % Reward	(C)=(A)-(D) $ Reward	(D)=Part II Rates	(E)=(F)/(A) % Penalty	(F)=(G)-(A) $ Penalty	(G)=Part II Rates
Staff Recommended (Part II Rates)		22.3%	$0.01677	0.05843	38.0%	$0.02857	0.10377
Duncan Valley (Part II Rates)		44.5%	$0.03344	0.04176	89.7%	$0.06747	0.14267
Duncan Valley Proposed (Table I Rates)		20.2%	$0.01520	0.06000	172.6%	$0.12980	0.20500

BEFORE THE ARIZONA CORPORATION COMMISSION

KRISTIN K. MAYES
Chairman
GARY PIERCE
Commissioner
PAUL NEWMAN
Commissioner
SANDRA D. KENNEDY
Commissioner
BOB STUMP
Commissioner

IN THE MATTER OF THE APPLICATION OF DUNCAN VALLEY ELECTRIC COOPERATIVE, INC. FOR APPROVAL OF A TARIFF FOR SINGLE PHASE TOU SERVICE	DOCKET NO. E-01703A-09-0040 DECISION NO. _____ ORDER

Open Meeting
March 31, 2010 and April 1, 2010
Phoenix, Arizona

BY THE COMMISSION:

FINDINGS OF FACT

1. Duncan Valley Electric Cooperative, Inc. ("Duncan Valley", "DVEC", "Applicant" or "Cooperative") is certificated to provide electric service as a non-profit corporation and public service corporation to its member-customers in Duncan, Arizona.

2. On February 2, 2009, Duncan Valley filed an Application ("Application") for authorization to provide Time-of-Use ("TOU") service to its Arizona single phase customers. The application was filed pursuant to Decision No. 69736 (July 30, 2007) which required that "Within 18 months of Commission adoption of this standard, each electric distribution utility shall offer to appropriate customer classes, and provide individual customers upon customer request, a time-based rate schedule under which the rate charged by the electric utility varies during different time

. . .

. . .

. . .

periods and reflects the variance, if any, in the utility's costs of generating and purchasing electricity at the wholesale level."[1]

3. The Cooperative's TOU rates, as proposed, would initially only be available to single phase residential customers. Duncan Valley's primary reason for initially limiting its proposed TOU rates to residential members is that the Cooperative has not determined the costs or feasibility of offering TOU rate options to its non-residential single phase customers. Staff will address this matter in more detail under its Findings.

Staff's Findings

4. Duncan Valley currently provides electric service to approximately 2,031 members in Arizona, of which approximately 1,918 (94 percent) are single phase customers. Arizona single phase residential members represent nearly 91 percent (1,740/1,918) of Duncan Valley's total Arizona single phase customers.

5. The Cooperative's filing and responses to Staff's data requests are summarized as follows: 1) at this time, Duncan Valley has not conducted cost of service or feasibility studies in support of its proposed TOU tariff; 2) the Cooperative relied on its existing rate structure and power costs, as well as TOU filings by similar cooperatives such as Trico Electric Cooperative ("Trico") to develop its proposed TOU rates and time periods; 3) the Cooperative believes that the usage patterns of Trico's members are similar to its customers' usage patterns, and as such, feels comfortable recommending a 70 percent off-peak and 30 percent on-peak usage ratio; 4) the majority of Duncan Valley's customers do not have meters that register and produce a record of hourly usage; 5) the Cooperative has concluded that the variation in non-residential single phase customers' usage is significantly higher than residential customers' usage variations, and has therefore recommended excluding non-residential single phase customers from TOU options at this time; 6) Duncan Valley's purchase power rates are not time differentiated at the wholesale level, consequently there are no energy-related cost savings available to pass on to its retail members; and, 7) load and coincident peak data were not filed in support of the proposed on-peak

[1] Docket No. E-00000A-06-0038, P. 7, lines 6-9

and off-peak hours, because the Cooperative believes that it is appropriate to use Trico's peak periods and days as models to develop their respective TOU periods. Staff notes that both DVEC and Trico (at the time of this application) buy all of their power from Arizona Electric Power Cooperative ("AEPCO") and pay a demand charge based on their demands at the time of AEPCO's monthly coincident peak.

6. The following summary table was developed by Staff to compare Duncan Valley's existing and proposed rates; and, DVEC's proposed TOU time periods with time periods recently approved for Trico in Decision No. 71253:

RESIDENTIAL RATE CLASS

Table I	**Existing**	**Proposed**		**Existing**
[A]	[B]	[C]		[D]
	Duncan Valley (Non TOU Rates & Hours)	Duncan Valley (TOU Rates & Hours)		Trico Electric* (TOU Hours)
Customer Charge	$20.00	$30.00 ($20 System+$10 Meter)		
On-Peak per kWh	$0.07520	$0.20500		
Off-Peak per kWh	$0.07520	$0.06000		
Summer Months	April-October	April-October		April-October
Summer On-Peak Hours (Remaining hours are Off-Peak hours)	All kWh (Every Day)	1 p.m. to 7 p.m. (Every Day)		1 p.m. to 9 p.m. (Monday-Friday)
Winter Months	November-March	November-March		November-March
Winter On-Peak Hours (Remaining hours are Off-Peak hours)	All kWh (Every Day)	6 a.m. to 9 a.m. and 6 p.m. to 9 p.m. (Every Day)		6 a.m. to 10 a.m. and 6 p.m. to 10 p.m. (Monday-Friday)
Estimated Annual On-Peak Hours		2,190		2,032

*Decision No. 71253 issued September 2, 2009. Off-Peak hours include the following holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day.

7. Based on information contained in Table I, Staff concluded that: 1) the Cooperative's proposed monthly Customer Charge in the amount of $30.00 is unsupported in the Application, and would represent an incremental increase of $10.00 per month (50 percent); 2) Duncan Valley's proposed annual on-peak hours exceed Trico's annual on-peak hours by 158 . . .

hours (2,190 – 2,032); and, 3) DVEC's proposed on-peak hours would include all weekends and holidays.

8. Staff's discovery also led to the following additional findings: 1) Duncan Valley's filing was made pursuant to Commission Decision No. 69736 dated July 30, 2007, and as such, the Cooperative is also required to "... investigate the feasibility and cost-effectiveness of implementing advanced metering infrastructure for its service territory and shall begin implementing the technology if feasible and cost-effective."[2]; 2) the approved base cost of power must be taken into consideration before finalizing rate design; and, 3) Duncan Valley's proposal to exclude non-residential single phase TOU customers from proposed Single Phase Time of Use schedule ("SPTOU") is not supported by Staff.

Single Phase Customers

9. Typically, utilities establish rate classes based on type of user; for example: Residential, Small Commercial and Industrial use customers. DVEC has established rate classes that are determined by the nature of the electric service delivered, such as single phase. The single phase rate schedule serves residential and commercial customers who receive power from transformers rated at 15 kVA or less. Single phase capacity accommodates the power needs of nearly all residential and small commercial customers. Normally, only customers with large motors (nominally greater than 10 Horse Power) or air conditioners (nominally greater than 10 Tons) require three phase service.

10. Staff does not support excluding non-residential single phase customers from the proposed Schedule SPTOU. Duncan Valley's primary reason for requesting the exclusion is that the Cooperative has not developed data to identify the usage patterns or TOU-related costs associated with its small commercial customers. Staff believes that the number of residential customers (1,740) compared to the number of small commercial customers (120) justifies establishing rates, terms and conditions based on the residential class, because the small commercial's impact on the TOU coincident peak is not likely to be significant. Furthermore, any

[2] Decision No. 69736, p. 7, lines 11-12

necessary adjustments to the proposed Schedule SPTOU rates, terms and conditions can take place at the end of a one-year experimental pilot period as discussed below.

Energy Rates

11. Although Duncan Valley opted to rely on TOU rates filed by other cooperatives having similar usage patterns, Duncan Valley did not recommend TOU energy rates that have similar on-peak to off-peak rate ratios. Table II illustrates the derivation of rate ratios.

Table II TOU RATES PER KWH AND RESULTANT RATE RATIOS

	Duncan Valley Proposed	Trico Existing	Staff Proposed*
A) On-Peak	$0.20500	$0.19320	$0.10377
B) Off-Peak	$0.06000	$0.07320	$0.05843
C) Ratios (A/B)	3.42	2.64	1.78

*Attachment 3, Part I

12. Duncan Valley's proposed TOU energy rates would create a rate ratio of approximately 3.42, compared to Trico's rate ratio of approximately 2.64 and Staff's proposed rate ratio of approximately 1.78. DVEC's proposed ratio is nearly 30 percent higher than Trico's existing rate ratio and approximately 92 percent above Staff's proposed rate ratio.

13. Staff is concerned about energy ratios because the higher they are compared to the rate ratio of a referenced model, the more unlikely such rates will encourage customers to sign-up for TOU rates as a way to reduce their monthly electric bills. One reason for this likelihood is that prospective TOU customers are seeking balanced TOU rates that provide "reasonable incentives" to move kWh usage to off-peak hours. Although it is nearly impossible to draft a definition that nearly everyone will agree to, most ratepayers agree that rewards (i.e. lower off-peak rates) should be reasonably balanced with potential penalties (i.e. reasonably higher on-peak rates). If a TOU on-peak rate is too severe, customers will opt out rather than expose themselves to a perceived severe financial risk.

14. Attachment 3, Part III illustrates the $/kWh impact on Duncan Valley's and Staff's proposed TOU rates. A general summary of TOU rates is that an increasing rate ratio is highly correlated (99.56 percent; Attachment 3, Part II) with higher on-peak rates (penalties) that are . . .

skewed upward more than off-peak rates (rewards) have been lowered. The following excerpt from Attachment 1 illustrates this point from a different perspective.

Table III RESIDENTIAL BILL COMPARISONS*

kWh Monthly Usage Level	Monthly kWh	Duncan Valley Current Rates	Duncan Valley Proposed TOU Rates	Duncan Valley Monthly Savings	Staff Proposed TOU Rates	Staff Monthly Savings
Low Usage	250	$38.80	$55.88	($17.08)	$40.36	($1.56)
Average Usage	743	$75.87	$106.90	($31.03)	$75.87	$0.00
Median Usage	1,875	$161.00	$224.06	($63.06)	$157.41	$3.59
High Usage	3,500	$283.20	$392.25	($109.05)	$274.46	$8.74

*Based on 70 percent usage being off-peak

15. At an average usage of 743 kWh per month (based on 2008 annual report data), Duncan Valley's proposed TOU rates would cost residential TOU members approximately $31 more per month (Attachment 1, Column D), compared to no additional cost under Staff's proposed rates (Attachment 1, Column H). In response to a Staff-initiated data request, on November 24, 2009, Duncan Valley recognized the "negative" outcome of its proposed rates and requested permission to withdraw and re-file its proposed TOU rates as part of its next rate case. Staff does not support allowing the Cooperative to withdraw its proposed TOU rates, because as Staff's Attachment 1 illustrates, TOU rates designed with more appropriate lower rate ratios produce monthly savings or losses that are significantly less extreme compared to existing non-TOU rates.

16. Regarding the 70 percent off-peak usage parameter, Staff believes that a 70 percent off-peak and 30 percent on-peak kWh usage ratio is a reasonable rate design parameter for Duncan Valley's single phase TOU customers. For example, Trico's actual residential TOU kWh usage as filed in its latest rate case was 71 percent off-peak and 29 percent on-peak (Docket No. E-01461A-08-0430, Schedule F-5.2, p. 4).

17. The following table summarizes the sensitivity of rates proposed by Staff under different off and on-peak kWh usage ratios. The impact on customers' monthly billings is fairly modest (under $8/3 percent) at the given usage ratios.

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TABLE IV SENSITIVITY TO DIFFERENT OFF AND ON-PEAK USAGE RATIOS

kWh Monthly Usage Level	Monthly kWh	+/- Deviation From Base Case Monthly Bill	Monthly Bill Under Staff's Proposed Rates @ 75/25	Monthly Bill Under Staff's Proposed Rates @ 70/30 *	Monthly Bill Under Staff's Proposed Rates @ 65/35
Low Usage	250	$0.57/1.41%	39.79	$40.36	40.92
Average Usage	743	$1.68/2.21%	$74.19	$75.87	$77.55
Median Usage	1,875	$4.25/2.70%	$153.16	$157.41	$161.66
High Usage	3,500	$7.93/2.89%	$266.53	$274.46	$282.40

* Base Case

18. Attachment 2 contains the derivation of the $0.05843 per kWh off-peak and $0.10377 per kWh on-peak rates. These rates are based upon a rate ratio of 1.78 as derived in Table II. Proposed TOU rates must also support the existing approved base cost of power rate. Attachment 3, Part I begins with the existing base cost of power in the amount of $0.05843 per kWh. Placing the off-peak rate at this level allowed Staff to develop an on-peak rate that produces a revenue neutral on and off-peak combination and a desirable rate ratio of 1.78. As discussed above, it is important to send the right price signals by "right sizing" the perceived "penalty" for using on-peak energy. Attachment 3, Part III illustrates the impact of different rate ratios on reward and penalty TOU rates.

Customer Charge

19. Regarding the Cooperative's proposed monthly Customer Charge in the amount of $30.00, Staff elected to base its rate design on a $22.35 Customer Charge, which reflects an increase of $2.35 per month. The $2.35 incremental rate is designed to cover the incremental carrying costs associated with the purchase and installation of single phase time-based meters. There are no incremental billing-related costs because, initially, existing employees will manually prepare TOU billings. Staff received cost data that are supported by Form 7, 2009 entries and produce an approximate incremental cost in the amount of $274 per meter. The annualized carrying costs (10.26 percent) produce an annualized, incremental monthly carrying cost in the amount of approximately $2.35 ($274 x 10.26% ÷ 12). Staff has recommended approval of its proposed $22.35 Customer Charge.

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Experimental One-Year Pilot Period

20. Staff believes that TOU rates approved in this docket should be offered to Duncan Valley's single phase customers as an experimental, optional TOU rate alternative. This approach gives the Applicant and Commission more flexibility to adjust rates, terms and conditions during a transition period from Non-TOU rates to optional TOU rates. Staff believes that a one year "pilot" period would be sufficient to identify, but not be limited to, the pros and cons of TOU rates for Duncan Valley's single phase customers, level of customer participation, customer savings or losses, impact on DVEC demand costs, operations and revenues; and, make comparisons between the TOU and net-metering programs.

21. Within one year and 60 days of the Commission's Decision in this matter, Staff has recommended that DVEC present its summary findings and recommendations to the Commission for review. If Duncan Valley files a rate case during the pilot period, Staff recommends that existing TOU rate options be incorporated into the rate case for consideration by the Commission. Under either scenario, Staff has recommended that Schedule SPTOU would remain in effect until acted upon by the Commission.

Fair Value Considerations

22. Staff has considered the proposed equipment charges in terms of fair value implications. In Decision No. 67433, issued on December 3, 2004, the Commission determined the fair value of Duncan Valley's property to be $2,972,556. According to more recent information provided by Duncan Valley, as of December 31, 2009, the estimated value of Duncan Valley's plant is $3,195,508. Although Staff considered this information, the proposed equipment charges on Schedule SPTOU would have no significant impact on the Cooperative's revenue, fair value rate base, or rate of return, because these charges are cost-based and relatively limited in scope.

Summary of Recommendations

23. Based on information contained in the Application and developed through discovery, Staff has made the following recommendations in its Memorandum:

A. Staff has recommended that Schedule SPTOU be approved as an experimental one-year pilot with Staff's proposed rates.

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B. In the absence of empirical data, Staff has recommended the adoption of the currently approved Trico Electric's TOU hours, days, months and holidays as approved in Decision No. 71253, and as summarized in Finding of Fact No. 6, Table I, Column D.

C. Within 90 days of the Commission's Decision in this matter, Staff has recommended that Duncan Valley be required to docket empirical data that support its decision to not install an advanced metering infrastructure as required by Decision No. 69736.

D. Within 30 days of the Commission's Decision in this matter, Staff has recommended that Duncan Valley be required to docket data that identify its 2009 monthly coincident and non-coincident power peaks (kW), and identify the times, dates and weekdays of the peaks.

E. Staff has recommended that Duncan Valley be ordered to file a revised Schedule SPTOU in compliance with the Decision in this matter within 15 days of the effective date of the Decision.

CONCLUSIONS OF LAW

1. Duncan Valley Electric Cooperative, Inc. is a public service corporation within the meaning of Article XV, Section 2 of the Arizona Constitution.

2. The Commission has jurisdiction over the Duncan Valley Electric Cooperative, Inc. and subject matter of the Application.

3. Approval of the Duncan Valley Electric Cooperative's proposed Rate Schedule SPTOU in this application does not constitute a rate increase as contemplated by A.R.S. Section 40-250.

4. The Commission, having reviewed the Application and Staff's Memorandum dated March 16, 2010, concludes that it is in the public interest to approve the Cooperative's proposed Schedule SPTOU as discussed and revised herein.

ORDER

IT IS THEREFORE ORDERED that Duncan Valley Electric Cooperative, Inc.'s proposed Schedule SPTOU, as discussed and revised herein, be and hereby is approved as an experimental, one-year pilot with Staff's proposed rates.

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IT IS FURTHER ORDERED that within 14 months of the Commission's Decision in this matter, Duncan Valley Electric Cooperative, Inc. docket its summary findings and recommendations regarding the pilot program for consideration by the Commission.

IT IS FURTHER ORDERED that Staff recommended time-of-use hours, days, months and holidays as summarized in Decision No. 71253 and Finding of Fact No. 6, Table I, Column D, of this Decision be adopted by Duncan Valley Electric Cooperative, Inc.

IT IS FURTHER ORDERED that within 90 days of the Commission's Decision in this matter, Duncan Valley Electric Cooperative, Inc. shall docket empirical data that support its decision to not install an advanced metering infrastructure as required by Decision No. 69736.

IT IS FURTHER ORDERED that within 30 days of the Commission's Decision in this matter, Duncan Valley Electric Cooperative, Inc. shall docket data that identify its 2009 monthly coincident and non-coincident power peaks (kW), and identify the times, dates and weekdays of the peaks.

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IT IS FURTHER ORDERED that Duncan Valley Electric Cooperative, Inc. shall docket, as a compliance item in this matter, tariff pages for the approved Schedule SPTOU within 15 days from the effective date of the Decision in this matter.

IT IS FURTHER ORDERED that this Decision shall become effective immediately.

BY THE ORDER OF THE ARIZONA CORPORATION COMMISSION

CHAIRMAN COMMISSIONER

COMMISSIONER COMMISSIONER COMMISSIONER

IN WITNESS WHEREOF, I, ERNEST G. JOHNSON, Executive Director of the Arizona Corporation Commission, have hereunto, set my hand and caused the official seal of this Commission to be affixed at the Capitol, in the City of Phoenix, this _____day of _____ , 2010.

_____
ERNEST G. JOHNSON
EXECUTIVE DIRECTOR

DISSENT: _____

DISSENT: _____

SMO:WHM:lhm\CH

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