BEFORE THE ARIZONA CORPORATION COMMISSION

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COMMISSIONERS
MIKE GLEASON – Chairman
WILLIAM A. MUNDELL
JEFF HATCH–MILLER
KRISTIN K. MAYES
GARY PIERCE

IN THE MATTER OF THE FILING BY TUCSON ELECTRIC POWER COMPANY TO AMEND DECISION NO. 62103.	DOCKET NO. E-01933A-05-0650
IN THE MATTER OF THE APPLICATION OF TUCSON ELECTRIC POWER COMPANY FOR THE ESTABLISHMENT OF JUST AND REASONABLE RATES AND CHARGES DESIGNED TO REALIZE A REASONABLE RATE OF RETURN ON THE FAIR VALUE OF ITS OPERATIONS THROUGHOUT THE STATE OF ARIZONA.	DOCKET NO. E-01933A-07-0402

TUCSON ELECTRIC POWER COMPANY'S RESPONSE TO CHAIRMAN GLEASON'S REQUEST FOR INFORMATION

Tucson Electric Power Company ("TEP" or "Company"), through undersigned counsel, hereby responds to Chairman Gleason's Request for Information.

RESPECTFULLY SUBMITTED this 16th day of April 2008.

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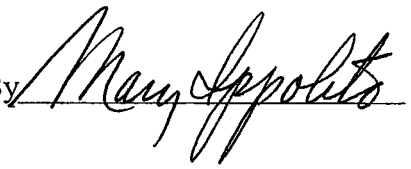
By 

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April 16, 2008

Docket Control
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Re: Tucson Electric Power Company
Docket Nos. E-01933A-07-0402 & E-01933A-05-0650

Docket Control:

In response to Chairman Gleason's April 3, 2008 request for information regarding Tucson Electric Power Company's ("TEP") residential Time-of-Use rates, TEP provides the following information:

1. For the residential class:

   A. What is the monthly median summer (May-October) usage in kWh?

   Response:
   The median monthly residential usage is 692 kWh.

   B. How were the tier breakpoints chosen?

   Response:
   The size of the first tier should represent a level of usage that covers the most basic needs. Based on customers' electric appliance mix and usage patterns, Tucson Electric Power Company ("TEP") believes that 500 kWh per month is an appropriate level to cover these basic needs. Additionally, 500 kWh delineates the lowest quartile of usage for Residential R-10. This means that around one-quarter of summer bills are less than, or equal to, this level. While approximately 75% of bills are in excess of 500 kWh, the monthly median (692 kWh) is close to 700 kWh. A customer using 700 kWh will purchase the majority of electricity (500 kWh out of 700 kWh – or 71% of usage) at the lower price block of 500 kWh, and 200 kWh at the mid-priced block (501 kWh – 3500 kWh per month).

TEP opted to restrict the lowest-priced block to the first 500 kWh (the first quartile) rather than use a more typical level (e.g., a median level) of 700 kWh to provide a conservation incentive to the one quarter of summer bills falling between the quartile and the median. TEP wanted more customers to see a bump in price for incremental usage so that more customers receive the conservation message.

The upper block of 3,500 kWh was meant to address consumption of our highest users. Only 1.5% of bills exceed this level, but these bills amount to 6% of residential usage.

C. How were the rate differentials chosen for the second tier (501 kWh – 3,500 kWh) and third tier (3,500 kWh and above)?

Response:
TEP used its best judgment in determining the differentials and used a differential of 2 cents between the first and second blocks and 1 cent between the second and third blocks. This sends a pro-conservation price signal without resulting in undue bill impacts. While the Commission has many times expressed a desire to mitigate impacts of rate design changes, a truly noticeable impact on higher-use customers is necessary to provide a meaningful conservation incentive.

In TEP's current rate case, Staff witness Mr. Frank Radigan has proposed even larger differentials. TEP has no problem with larger differentials, as proposed by Staff. However, the Company notes that the inclining block rate and larger differentials reduce TEP's revenue stability because more revenue is designed to be collected from upper block usage that may disappear (along with the revenue) with conservation. Despite the negative financial implications in the more immediate term, TEP supports the pro-conservation inverted block structure because the conservation it encourages helps defer capacity and results in longer-term cost savings.

2. For the residential class Time-of-Use ("TOU") rates:

A. How were the hours chosen for the off-peak, shoulder and peak hours?

Response:
The following goals guided TEP's choice of hours:

i. **The TOU rates must promote a reduction of peak demand to help defer capacity additions. This is best accomplished by restricting the "peak" (and "shoulder-peak") designation a very limited number of hours, the most critical hours of the day.** TEP's statistical methodology supports restricting the on-peak designation to a very limited number of the most critical peak hours (summer: 4 peak hours/day; 4 shoulder-peak

hours/day; 16 off-peak hours/day and winter: 8 peak hours/day; 16 off-peak hours/day).

In extreme desert climates like the TEP service territory, customers may be unable or unwilling to sustain usage restrictions through an entire, overly-long peak period (such as a peak period with a 12-hour duration). Past experience has shown that even customers with the best intentions to conserve over a 12-hour summer peak period – typically starting at 9 a.m. or 10 a.m. - may be tempted to "make a few exceptions" when the home becomes too uncomfortable in the waning hours of the peak. In the unfortunate situation that the exceptions occur three-quarters of the way though the period, the load may coincide with the system peak (typically around 4 p.m. to 5 p.m. on extreme summer days) or the localized peak of the distribution system in predominately residential neighborhoods (typically around 7 p.m. on extreme summer days). In these cases, a customer, in spite of (and perhaps because of) his otherwise commendable efforts to conserve during peak, may actually cause peak demand to *increase*, even though energy use over the peak period is slightly lower. The battle (a reduction in energy use over the 12-hour peak) may have been won, however the more important war (the peak demand reduction that can lead to load deferrals and big long term savings) has been lost. For this reason, TEP pioneered the "super-peak" design in Arizona with its Pricing Plan 70 (implemented in 1996). Under Pricing Plan 70, summer peak hours are restricted to a limited number of hours; the 12-hour peak in an earlier experimental rate, Pricing Plan 21, was abandoned.

Statistical approach:
TEP looked at the 36 summer days and 36 winter days with the highest peaks in 2003, 2004, and 2005. These extreme days create the type of conditions that TOU rates should address. For each of the 24 hours of the day, means and standard deviations of the load (as a percentage of daily system (generation) peak) were calculated. Confidence intervals (95% confidence) were constructed around the means. Hours for which 100% of daily peak was within the 95% confidence interval were strong candidates for peak and shoulder designation. If 100% of peak is within a 95 % confidence interval for a given hour – for example, 4 p.m. in the summer - then it is not unusual for 4 p.m. to be the peak hour. The predawn hour of 3 a.m. in the summer is definitely an off-peak hour, because 100% of peak falls far beyond the upper bound of the 95% confidence interval, which means the probability of this hour being the peak hour on a summer day is much less than 2.5%. (A 95% confidence interval leaves 5% in a tail area (rejection region), and the tail area is comprised of distinct upper and lower tail areas each accounting for 2.5% of total area.)

Some judgment was used in designating the time period for hours that were slightly above or below the confidence interval boundaries. Other things constant, an hour at the end of a peaking period is more critical (and more likely to be designated as peak or shoulder) than an hour with identical load at the beginning of the peaking period. Spikes are more likely to result at the end of the peaking period because customers may be watching the clock and "chomping at the bit" to use more energy after several hours of peak and shoulder constraint. At the beginning of a peaking period, customers could still be enjoying the benefits of their off-peak consumption (e.g., pre-cooling the house). Additionally, the TOU periods are designed based on system peak, which in the summer typically occurs a couple of hours earlier than localized distribution peaks in residential areas. Favoring hours at the end of peaking periods for peak/shoulder designation addresses this distribution issue, at least for residential customers.

ii. **The TOU design offers customers achievable bill reductions through load shifting (or shedding).** Substantial savings can be realized by reducing peak electricity usage. To provide an incentive for customers to cut peak usage, TEP designed rates that collect substantial revenues during the peak period, based on test-year consumption. Of course, most consumption in the test-year was under non-TOU rate structures; therefore customers had little financial incentive to control load during this test-year period used for designing rates. However, with larger peak prices under the proposed TOU rates, customers have an added incentive to reduce peak usage. Therefore, TEP is unlikely to collect the revenue resulting from rate design calculations because these calculations do not account for the price elasticity effect (i.e., the peak period energy reduction resulting from higher peak prices). TEP can expect to see some revenue shortfall, because the Company performed no pro-forma adjustment to account for this effect. This is the same type of price elasticity issue that the Company discussed above in reference to block differentials. And, as discussed above, TEP is willing to actively promote conservation to help achieve the longer-term savings associated with capacity deferral.

iii. **The TOU rate must be customer-friendly.** Load shifting or shedding can be accomplished with minimal inconvenience. TEP's 16-off peak hours assures that customers will have plenty of load shifting opportunities. Again, TEP's peak/shoulder hours never amount to more than 8 hours per day. We are fortunate that in limiting the number of peak hours supports both this goal, as well as the first two goals.

iv. **The TOU rate promotes conservation.** As discussed, TEP's innovative rate design incorporates an inclining block structure into the TOU rates.

TEP will design a customer education program to enhance customer understanding, acceptance and satisfaction, and help insure that conservation goals are met.

B. How were the rate differentials chosen between each set of hours?

Response:
As with the block differentials, TEP balanced the need for meaningful, pro-conservation price signals against the concerns of customer impact. And, as discussed above, TEP can accept, and even supports, larger differentials. Larger TOU period differentials and seasonal differentials have been supported by interveners in the Company's current rate case.

C. How were the rate differentials chosen within each set of hours?

Response:
Within a given time period, all usage is priced the same for a given class. There is no rate differential within a set of hours.

Sincerely,

Michelle Livengood

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