OPEN MEETING AGENDA ITEM

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0000122643

Susan Casady
Regulatory Programs Leader
State Regulation

Tel. 602-250-2709
Fax 602-250-3003
e-mail Susan.Casady@aps.com

Mail Station 9708
PO Box 53999
Phoenix, Arizona 85072-3999

January 28, 2011

Arizona Corporation Commission
DOCKETED
JAN 28 2011
DOCKETED BY

Docket Control
Arizona Corporation Commission
1200 W. Washington
Phoenix, AZ 85007

RE: Arizona Public Service Company 2008 Amended Rate Case - Super Peak and Critical Peak Programs Impact Study Results
Docket No. E-01345A-08-0172

Pursuant to Decision No. 71448, dated December 30, 2009, Arizona Public Service Company ("APS") was ordered as follows:

> APS to prepare a study on the impact of its super peak and critical peak programs, study shall examine actual experience with APS's demand response programs and shall continue for 2 years. APS shall file reports as a compliance item in this docket outlining the study and describing the results of the study by 1/31/2011, a second report by 12/31/2011, and a final report within 30 days of the end of the study.

Enclosed please find APS's Super Peak and Critical Peak Programs Impact Study Results.

If you have any questions regarding this information, please contact Chuck Miessner at (602) 250-3081.

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AZ CORP COMMISSION
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Sincerely,

Leland K Snook for
Susan Casady

SC/kc
Attachment

cc: Brian Bozzo
Steve Olea
Terri Ford

Arizona Public Service Company
Demand Response Pricing Rates
First Progress Report
January 2011

In Compliance with Decision No. 71448,
Docket No. E-01345A-08-0172

Arizona Public Service Company
Demand Response Pricing Rates
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Background

In January 2010, APS implemented three new demand response pricing rates: residential super-peak time-of-use rate schedule ET-SP; residential critical peak pricing rate schedule CPP-RES; and general service critical peak pricing rate schedule CPP-GS. These demand response rates, which were approved in Decision No. 71448, are part of APS's plan to achieve an additional 250 MW of demand response.[1]

APS is conducting a two-year study of these pricing plans over the 2010 and 2011 summer months and will provide two progress reports by January 31, 2011 and December 31, 2011 and a final report within 30 days of the end of the Study. This first progress report shall provide a general outline of the study and the results from summer 2010.

Study Outline

The demand response pricing study is designed to:

1. Determine the impact of the rates on participants' energy use during critical peak hours;
2. Assess the impact on the mix of power generation resources, including the use of coal-fired power resources;
3. Estimate the resulting reductions on air emissions including carbon dioxide, sulfur dioxide, nitrogen oxides, particulate matter, and mercury;
4. Evaluate the overall benefits of demand response programs; and
5. Identify methods to better integrate demand response programs and energy efficiency programs.

[1] See Decision No. 71448, Findings of Fact no. 89.

The Study action items and timeline is as follows:

Summer 2010 Program	
Initial customer enrollment	Jan – May 2010
Collect hourly load data	June – Sept 2010
Evaluate methods for estimating baseline load data.	March – May 2010 Sept – Dec 2010
Assess data and methods for estimating environmental impacts	Sept-Dec 2010
Estimate energy impacts	Oct 2010 – Jan 2011
Complete first progress report	Jan 2011
Summer 2011 Program	
Additional customer enrollment	Jan – May 2011
Collect hourly load data	June – Sept 2011
Estimate energy impacts	Oct 2011 – Dec 2011
Complete Second progress report	Dec 2011
Final Report	
Assess overall costs and benefits of the demand response rates	Sept – Dec 2011
Assess integration of demand response and energy efficiency programs	Jan – Sept 2011
Complete final report	Jan 2012

Program Description

The demand response rates are designed to encourage customer load reduction by providing relatively high price signals during critical summer hours, when APS experiences high electric loads or high electric market prices as a result of major generation or transmission outages.

For ET-SP, super peak hours occur every weekday afternoon, and for CPP-RES and CPP-GS critical hours are intermittent and based on random called events.

ET-SP is similar to the APS's standard TOU rate, ET-2, with a 7 hour on-peak period, but adds a super peak price for weekday afternoons from 3 p.m. – 6 p.m. during June through August. The summer off-peak price is discounted to off-set the higher super peak price. The customer has the opportunity to have lower monthly bills by reducing load during either the on-peak or super-peak periods, or both.

CPP-RES and CPP-GS are in addition to the customer's standard rate plan and provide a high price for critical hours as called by the Company with one day advance notice. A discount is also applied to the customer's total monthly kWh to off-set this high price. Critical events may be invoked by the Company for the period 2 p.m. to 7 p.m. weekdays (Monday through Friday) during June through September, not including holidays. The Company will invoke a minimum of 6 and a maximum of 18 CPP events per calendar

year, for 5 hours per event and 90 hours per year. Also, customers on CPP-GS must demonstrate the capability of reducing load by 200 kW prior to going on the rate schedule. The customer has the opportunity to lower monthly bills by reducing load during the critical peak event periods.

RESULTS – SUMMER 2010

Customer Participation

For the 2010 summer period, CPP-RES enrollment was 755 customers in May, and 683 by the end of the summer season. The retention rate for the program for the first year was 90%. ET-SP enrollment was 94 customers in February, 136 in August, and 175 in December 2010.

In contrast to CPP-RES and ET-SP, APS was not able to acquire business participants for CPP-GS. Customers chose to participate in competing programs such as Peak Solutions, which offered better monthly bill savings opportunities and less frequent load interruptions over CPP-GS.

Program Impacts

A. Energy and Demand Use by Customers

CPP-RES

APS used a baseline approach rather than a control group to estimate customer load reduction. To calculate the energy reduced for each customer, APS investigated a few different approaches for determining the customer baseline (CBL). The CBL establishes a method for estimating how much electricity a customer would have used had it not reduced its use in response to high prices during critical summer hours, or demand response (DR) events. The energy reduced is the CBL less actual load during a DR event.

For CPP-RES, APS found the average customer load reduction to be between 0.84 kW (18% lower) and 1.22 kW (25% lower), using various CBL approaches. The total energy reduced over all critical event hours was estimated to be 18.9 MWH.

ET-SP

To calculate the energy reduced for ET-SP customers, APS again used a CBL approach. To determine the CBL for ET-SP customers, APS used an indexed load shape from ET-2 customers, a good approximation for baseline time-of-use energy use. As with CPP-RES, energy reduction for ET-SP is calculated as the CBL less average load during the summer period.

For ET-SP, APS found the average demand reduction for the entire class for an average day was 375.81 kWh. For the period June 1 – August 31, estimated energy reduction was 24.43 MWH.

B. Air Emissions

Table 1 shows the estimated impact on emissions. Because the programs are designed to reduce peak demand for the top 1-2% of hours in the year, the impact is very small compared to energy efficiency programs that would encompass all hours. The impacts on particulate matter and mercury are insignificant and therefore are not listed below.

Table 2.

Air Pollutant	CPP-RES	CPP-GS	ET-SP	Total
Sulfur Dioxide (lbs)	0.1	0	0.1	0.2
Nitrogen Oxide (lbs)	2	0	2.1	4.1
Carbon Dioxide (Mil lbs)	0.017	0	0.022	0.039

C. Generation Resources

The average estimated MW reduction for both CPP-RES and ET-SP during critical summer hours was 0.65 MW. The marginal generation resource that would be deferred from these programs is a 45 MW LMS 100 combustion turbine unit. It is unlikely that a coal generation unit would be impacted.