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BEFORE THE ARIZONA CORPORATION COMMISSION

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KRISTIN K. MAYES  
Chairman

GARY PIERCE  
Commissioner

PAUL NEWMAN  
Commissioner

SANDRA D. KENNEDY  
Commissioner

BOB STUMP  
Commissioner

Arizona Corporation Commission

DOCKETED

JUL 12 2010

DOCKETED BY *MM*

IN THE MATTER OF THE APPLICATION )  
OF TUCSON ELECTRIC POWER )  
COMPANY FOR APPROVAL OF DIRECT )  
LOAD CONTROL PROGRAMS - )  
COMMERCIAL AND INDUSTRIAL )  
DEMAND RESPONSE PROGRAM )

DOCKET NO. E-01933A 07-0401

DECISION NO. 71787

ORDER

Open Meeting  
June 29 and 30, 2010  
Phoenix, Arizona

BY THE COMMISSION:

FINDINGS OF FACT

1. Tucson Electric Power Company ("TEP" or "Company") is certificated to provide electric service as a public service corporation in the State of Arizona.

Background

2. On January 5, 2010, TEP filed two proposed Direct Load Control ("DLC") Programs, a Commercial and Industrial Demand Response Program and a Residential and Small Commercial Direct Load Control Program. The Commercial and Industrial ("C&I") Program is being addressed here. The Residential and Small Commercial Program will be addressed separately.

3. The C&I Program ("Program") would target customers capable of delivering 100 kW or more of load curtailment. The Program is expected to provide up to 40 MW of load reduction potential within 14 to 18 months after Program approval. TEP proposes to manage peak demand and to mitigate system emergencies with this Program.

**Program Concept and Description**

4. Demand reductions would be delivered on a turnkey basis by a third-party implementation contractor ("IC") who would negotiate load reduction agreements with multiple customers and aggregate these customers to provide TEP a confirmed and guaranteed load reduction upon request. The contract between TEP and the IC would be similar to a power purchase agreement since the IC would be obligated to provide the required megawatts of load curtailment within a specified amount of time, and would be penalized for failing to deliver the load reductions as agreed.

5. TEP held a competitive solicitation for the C&I DLC implementation contractor, and EnerNOC, Inc. was selected because of its experience, utility references, and price. TEP has a finalized contract with EnerNOC.

6. The Program would enroll enough customers to provide up to 40 MW of summer peak demand reduction, available for up to 80 hours per year, with a typical load control event lasting 3-4 hours. The program would be targeted toward C&I customers who have demands sufficient to enable load curtailments of approximately 100 kW or more per customer, and whose operations would permit load reductions during summer peak load hours.

**Program Rationale**

7. Commercial and industrial load represents approximately 22 percent of system demand during summer peak hours. Modifying the use of chillers, air conditioning units, lighting, fans, and other end uses can significantly reduce demand at peak times.

8. C&I customers are expected to participate in the demand response program as a result of financial incentives provided by EnerNOC, the selected IC. EnerNOC would be free to customize the incentive terms based on a number of factors such as:

- the amount of load able to be reduced;
- whether the load can be directly controlled by the contractor (automated demand response);
- the amount of advanced notification required by the customer;

...

- 1                   - the maximum amount of time the customer is willing to curtail load in a given  
2                   event;  
3                   - the number of events, and  
4                   - the total number of hours the customer is willing to curtail load per year.

5           9.       Staff believes that the above factors are reasonable as the basis for determining  
6 customer incentives.

7           10.       The Program would generate the following benefits:

- 8                   - avoided firm capacity required to meet reserve requirements;  
9                   - reduced need for high-priced peaking generating units;  
10                  - reduced or avoided open-market power purchases during periods of high energy  
11                  prices;  
12                  - greater grid stability and reduction in outages due to reduced grid demand; and  
13                  - emergency and rapid-response demand reduction in case of system-wide or  
14                  localized emergencies.

15       **Delivery Strategy and Administration**

16           11.       TEP would design basic program requirements and terms (e.g., total MW, desired  
17 response times, target market) and the IC would be overseen by TEP employees.

18           12.       The responsibilities of the third-party IC would include, but not be limited to, the  
19 following:

- 20                   - recruitment of participants;  
21                   - negotiation and payment of incentives to customers for participation;  
22                   - assistance to participants in designing effective load control strategies;  
23                   - provision of load control equipment and ensuring that participants successfully  
24                   enable curtailment capability;  
25                   - participant tracking and reporting;  
26                   - establishing a software system that can be used by TEP to call and monitor load  
27                   control events;  
28                   - Call Center services; and

1 - customer satisfaction and problem resolution.

2  
3 13. TEP employees would be responsible for:

4 - managing the IC and tracking program implementation;

5 - developing internal staff training and protocols for calling load control events;  
6 and

7 - public relations, program promotion, and cross-program coordination with  
8 other demand-side management and renewable opportunities.

9 14. TEP plans to utilize existing employees to support the initial introduction of this  
10 Program, but TEP anticipates the need for additional employees as the Program reaches maturity.

11 **Marketing and Communications**

12 15. Customers able to provide reliable and significant load reductions would be invited  
13 to participate. It is not anticipated that mass media such as radio and television would be needed;  
14 rather, the IC would conduct direct marketing according to an approach approved by TEP so that  
15 consistent TEP public communications is ensured.

16 **Monitoring, Evaluation, and Verification**

17 16. Monitoring, evaluation, and verification ("MEV") of the Program by an  
18 independent evaluation contractor would verify that the load curtailments are providing the  
19 capacity for which TEP is paying and counting on for resource planning purposes. The monitoring  
20 and evaluation contractor would not responsible for program delivery.

21 17. A process evaluation would review how well TEP and the IC have administered the  
22 program, and how customers perceive the program. A program delivery assessment would include  
23 interviews with TEP employees, vendors, and participants to identify program strengths, areas for  
24 improvement, and features that are preferred or disliked by customers. Customer feedback,  
25 obtained through surveys of participants at various stages of the program implementation, would  
26 be a major input to process evaluation.

27 18. An impact evaluation would address changes in demand during load control events.  
28 These demand changes would be estimated using statistical regression modeling and comparing

1 each customer's expected usage during an event with their actual usage based on metered data  
2 during the event and in the hours and days prior to the event. The customer-specific load  
3 reductions reported by the IC would be verified, and system-wide reductions would be estimated  
4 using data from an entire summer season. Alternative methodologies may be examined to provide  
5 a more accurate predictor of usage.

#### 6 **Estimated Peak Demand Savings**

7 19. TEP's agreement with the IC would guarantee demand reductions upon request.  
8 TEP expects 10 MW of capacity to be available in the first year of operation, and 40 MW during  
9 the following years of the expected ten-year contract period. These demand savings would be  
10 available throughout the anticipated ten-year contract duration, which may be extended to continue  
11 program benefits.

12 20. TEP has assumed demand savings only; energy reductions and environmental  
13 benefits are not considered to be significant enough to influence cost-effectiveness or to contribute  
14 significantly toward emissions reductions goals.

#### 15 **Program Costs**

16 21. The estimate of total program costs is \$25.4 million over ten years. This is  
17 approximately \$800,000 the first year, and \$2.7 million in each of the next nine years. The present  
18 value of these costs in 2009 dollars is \$17.4 million discounted at 7.0 percent. These costs include  
19 participant incentive payments which are excluded in the benefit/cost analysis discussed below.

20 22. TEP seeks cost recovery of the Program through its demand-side management  
21 ("DSM") adjustor. TEP has a pending application for approval to increase its DSM adjustor rate to  
22 cover the costs of the Program, among other DSM items (Docket Nos. E-1933A-07-0402 and E-  
23 1933A-05-0650).

#### 24 **Program Cost Effectiveness**

25 23. TEP calculated the present values ("PV") of benefits and costs over 10 years as  
26 shown in Table 1.

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**Table 1. Benefits and Costs (10-Year Program)**

PV Benefits	\$21.06 million
PV Costs	\$8.24 million
Net PV (PV Benefits - PV Costs)	\$12.82 million
Benefit/Cost Ratio	2.56

24. Staff's analysis confirms these results, arriving at a benefit/cost ratio of 2.47 using the methodology Staff has utilized for other DSM programs presented to the Commission.

25. In the 1991 Resource Planning Decision, the Commission established the Societal Test as the methodology to be used for determining the cost-effectiveness of DSM programs. Under the Societal Test, the incremental benefits to society must be greater than the incremental costs of having the program in place. That is, the ratio of benefits to costs must be greater than one. The Societal Test includes the cost of the measure and the cost of implementing the program, excluding rebates to customers. The program benefits include avoided demand and energy costs, as well as avoided environmental impacts. However, as noted previously, energy reductions and environmental benefits resulting from the proposed Program are not considered to be significant enough to influence cost-effectiveness or to contribute significantly toward emissions reductions goals.

26. Staff expects the Program to be cost-effective over 10 years. As shown above, the present value of program costs is projected to be about \$8.24 million. On a comparable basis with the cost of new generation capacity, this implies slightly more than \$200 per kW for the 40,000 kW (40 MW) of capacity the Program may ultimately avoid. This is but a small fraction of the installed cost of new generation.

27. Avoided transmission and distribution costs may also be realized, as well as marginal energy savings and the related environmental benefits, as noted previously. These benefits would be considered small relative to the capacity benefits and have not been quantified. The exclusion of these difficult-to-quantify benefits points to the conservative nature of the economic analysis performed by Staff and TEP.

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**Program Implementation Schedule**

28. TEP hopes to have the program functional in time for the upcoming 2010 summer season. The completion of one cooling season's experience would allow a complete evaluation by December 2010.

**Recommendations**

29. Staff has recommended that the TEP Commercial and Industrial Demand Response Program be approved as discussed herein. No explicit approval of the TEP/EnerNOC contract is recommended.

30. Staff has further recommended that TEP include a comprehensive analysis of the effectiveness of the Program within the DSM reports filed with the Commission. The report shall include, at a minimum:

- descriptions of program marketing;
- copies of marketing materials;
- number of customers enrolled in the program;
- amount of demand and energy shifted from peak hours;
- TEP's cost savings due to demand reduction and load shifting;
- total and average cost of installed customer hardware;
- methodology for measurement and verification of energy use reductions;
- estimated cost savings to participants; and
- descriptions of any problems and complaints reported by customers concerning interruptions, temperature set-backs, costs, or other issues.

31. Staff has also recommended that TEP include in its DSM reports information concerning DSM personnel including:

- number of DSM employees at the beginning of the reporting period;
- number of DSM employees added during the reporting period; and
- number of DSM employees at the end of the reporting period.

32. The Commission believes it is in the public interest for TEP to develop, and submit for Commission consideration, a residential bill comparison pilot program that will allow its

1 residential customers to compare their monthly energy usage with that of other similarly situated  
2 customers. We are aware that in other states, such on-bill comparison programs, in which a subset  
3 of customers is mailed a report on their energy usage that provides a qualitative comparison of  
4 their energy usage with that of other customers, along with suggestions for each customer can  
5 reduce his or her energy usage and total bill, have proven effective in significantly reducing both  
6 overall utility and individual consumer energy demands. These bill comparison programs are  
7 being offered at utilities such as Sacramento Municipal Utility District (“SMUD”), Pacific Gas and  
8 Electric, AEP Ohio and Puget Sound Energy. Additionally, we take notice that Arizona Public  
9 Service Company recently filed such a program for Commission consideration as part of its 2011  
10 Energy Efficiency Implementation Plan. While TEP will not be required to file an Energy  
11 Efficiency Implementation Plan until the Commission’s Energy Efficiency rules are finalized, we  
12 are cognizant that TEP files DSM programs individually, and believe that TEP and its customers  
13 could benefit from the formation of an appropriate on-bill comparison program.

14       33. The Commission is impressed with the anticipated benefits associated with TEP’s  
15 Demand Response proposal and believes that the Company should consider expanding its  
16 Commercial and Industrial Load Control program to include all cost-effective C&I Direct Load  
17 Control and Demand Response. Given that the instant program is anticipated to achieve a TEP-  
18 estimated 2.56 Benefit/Cost Ratio, and will result in \$12.82 million in net present value benefits to  
19 ratepayers, we believe it makes sense to require the Company to continue to maximize its use of  
20 cost-effective DLC and Demand Response programs in the C&I sector. Additionally, though the  
21 Company has applied to conduct 40 Megawatts of load control potential over the time period of  
22 the program, the Federal Energy Regulatory Commission (“FERC”) recently reported in its  
23 “National Assessment of Demand Response Potential” that Arizona’s potential peak reduction  
24 from demand response in 2019, at full participation, was 27.7 percent or 6,200 MWs. While we  
25 recognize that the FERC study is a protection and has limitations, it nevertheless suggests that

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1 there are significant opportunities for demand response above and beyond TEP's current actions.  
2 Therefore, we will require that TEP file a proposal for at least an additional 85 Megawatts of  
3 Demand Response or C&I Direct Load Control no later than September 1, 2010, for Staff review  
4 and Commission consideration.

5 CONCLUSIONS OF LAW

6 1. TEP is an Arizona public service corporation within the meaning of Article XV,  
7 Section 2, of the Arizona Constitution.

8 2. The Commission has jurisdiction over TEP and over the subject matter of the  
9 application.

10 3. The Commission, having reviewed the application and Staff's Memorandum dated  
11 June 15, 2010, concludes that it is in the public interest to approve the Commercial and Industrial  
12 Demand Response Program as discussed herein.

13 ORDER

14 IT IS THEREFORE ORDERED that Tucson Electric Power Company's Commercial and  
15 Industrial Demand Response Program be and hereby is approved as discussed herein.

16 IT IS FURTHER ORDERED that Tucson Electric Power Company include a  
17 comprehensive analysis of the effectiveness of the Program within the DSM reports filed with the  
18 Commission and include, at a minimum, the items listed in Finding of Fact No. 29.

19 IT IS FURTHER ORDERED that Tucson Electric Power Company include in its DSM  
20 reports information concerning DSM personnel including the items listed in Finding of Fact  
21 No. 30.

22 IT IS FURTHER ORDERED that Tucson Electric Power Company shall develop a bill  
23 comparison pilot program that will allow its customers to compare their energy usage with that of  
24 other similarly situated customers, and shall submit the pilot program proposal, no later than  
25 September 1, 2010, for Staff review and Commission consideration.

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1 IT IS FURTHER ORDERED that Tucson Electric Power Company shall file a proposal for  
2 at least an additional 85 Megawatts of Demand Response or C&I Direct Load Control no later than  
3 September 1, 2010, for Staff review and Commission consideration.

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

5  
6 **BY THE ORDER OF THE ARIZONA CORPORATION COMMISSION**

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9 CHAIRMAN

  
COMMISSIONER

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12 COMMISSIONER

  
COMMISSIONER

  
COMMISSIONER

13 IN WITNESS WHEREOF, I, ERNEST G. JOHNSON,  
14 Executive Director of the Arizona Corporation Commission,  
15 have hereunto, set my hand and caused the official seal of this  
16 Commission to be affixed at the Capitol, in the City of  
17 Phoenix, this 12<sup>th</sup> day of July, 2010.

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19 ERNEST G. JOHNSON  
20 EXECUTIVE DIRECTOR

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22 DISSENT: \_\_\_\_\_

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24 DISSENT: \_\_\_\_\_

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