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MEMORANDUM

To: Public Service Commission
From: Division of Public Utilities
Constance White, Director
Artie Powell, Manager, Energy Section
Judith Johnson, Technical Consultant

Subject: EAct 2005 Amendments to PURPA - Time-Based Metering and Communications Standard - Docket 06-999-03

Date: January 8, 2007

ISSUE

On August 8, 2005, the President signed into law the Energy Policy Act of 2005 (EAct2005) which included amendments to the Public Utility Regulatory Policies Act (PURPA) and added five new federal standards to PURPA section 111(d) for state commissions and utilities to consider. PURPA states that “each state regulatory authority (with respect to each electric utility for which it has ratemaking authority) and each nonregulated electric utility shall consider each standard” and “make a determination concerning whether or not it is appropriate to implement such standard”¹ The standards are regarding the following: Net Metering, Fuel Diversity, Fossil Fuel Generation Efficiency, Time-Based Metering and Communication, and Interconnection.

According to a reference manual produced by EEI and NARUC, and others, the law requires that state commissions and unregulated utilities consider the standards; they are not required to implement them. They may:

“implement any standard, decline to implement any standard, or adopt a different or modified standard from those described in the statute (PURPA section 117(b)). However, if they decline they are required to state in writing the reason for their decision and make that statement available to the public (PURPA section 111(c)). State commissions and utilities

¹ PURPA section 111(a)

may also take into account prior determination of the standards if it complies with the requirement of Title I of PURPA (PURPA section 112(a)).”²

This memo is the Division of Public Utilities’ recommendation regarding the Time-Based Metering and Communication Standard. We are making our recommendations on this standard first since it contains language that implies that some action is required 18 months after implementation of EAct 2005; that is, by February 8, 2007.

We have reproduced the first part of the EAct 2005 section that deals with Smart Metering. The entire section is included as Attachment I.

PURPA TIME-BASED METERING AND COMMUNICATIONS STANDARD:

- (A) Not later than 18 months after the date of enactment of this paragraph, each electric utility shall offer each of its 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 cost of generating and purchasing electricity at the wholesale level. The time-based rate schedule shall enable the electric consumer to manage energy use and cost through advanced metering and communications technology.
- (B) The types of time-based rate schedules that may be offered under the schedule referred to above include, among others –
- i) time-of-use pricing whereby electricity prices are set for a specific time period on an advance or forward basis, typically not changing more often than twice a year, based on the utility’s cost of generating and/or purchasing such electricity at the wholesale level for the benefit of the consumer. Prices paid for energy consumed during these periods shall be pre-established and known to consumers in advance of such consumption, allowing them to vary their demand and usage in response to such prices and manage their energy costs by shifting usage to a lower cost period or reducing their consumption overall;
 - ii) critical peak pricing whereby time-of-use prices are in effect except for certain peak days, when prices may reflect the costs of generating and/or purchasing electricity at the wholesale level and when consumers may receive additional discounts for reducing peak period energy consumption;
 - iii) real-time pricing whereby electricity prices are set for a specific time period on an advanced or forward basis, reflecting the utility’s cost of generating and/or purchasing electricity at the wholesale level, and may change as often as hourly; and
 - iv) credits for consumers with large loads who enter into pre-established peak load reduction agreements that reduce a utility’s planned capacity obligations.

² Reference Manual and Procedures for Implementation of the “PURPA Standards” in the Energy Policy Act of 2005, March 22, 2006. Sponsored by American Public Power Association (APPA); Edison Electric Institute (EEI); National Association of Regulatory Utility Commissioners (NARUC); National Rural Electric Cooperative Association (NRECA). Prepared by Kenneth Rose and Karl Meeusen.

RECOMMENDATION

The Division of Public Utilities recommends that the Smart Metering standard not be adopted by the Utah Public Service Commission at this time. The cost and benefits of implementing the standard for various customer classes are not known at this time. Further, the language of the standard as written implies that it would be required to be implemented by February 8, 2007 not giving enough time for consideration of the best way to implement such a standard.

However, we also recommend that further study into this issue be made since there are several possible benefits that could accrue to the Utah electric system from the effective use of advanced metering. Investigation should be made to evaluate whether such benefits outweigh the cost of implementing smart metering and/or whether other approaches could bring similar benefits at a lower cost. Investigation would also inform whether an equivalent PURPA standard would be appropriate. We think it is important that Rocky Mountain Power get input from regulatory bodies and other interested parties in designing the studies.

During the discussion at the November 9, 2006 Technical Conference on Smart Metering, parties indicated that the 2006 General Rate Case stipulation called for an investigation into winter on-peak period and on-peak/off-peak price differential in the Stipulation addressing Schedules 6, 6A, and 6B which could be incorporated into, or be the starting point for, investigation into Smart Metering. The Division recommends that the stipulation commitments (that are to be completed prior to the next rate case) be incorporated into the larger investigation of time based metering and communication.

As a beginning point of the investigation, we recommend that PacifiCorp conduct a business case (cost/benefit analysis) for categories of customers, residential, commercial, and industrial, for which a business case has not been previously made. Each of these customer categories should also be examined for the three types of time based rates identified in the PURPA proposed standard: time-of-use pricing (TOU), critical peak price (CPP), and real time pricing (RTP). A preliminary assessment of some categories and types of rates could be made to see if it made sense to do a full business case. For example, a high level assessment of residential customers and real time pricing may indicate that response would be minimal and therefore doing a study would be needless. In addition, we recognize that Rocky Mountain Power already offers some smart metering type programs. However, we think that a study could perhaps find ways to make these programs more effective.

The Federal Energy Regulatory Commission has made a study about smart metering and there are many other resources available to support analysis of Smart Metering. For example, a teleconference titled "E-Forum Deciding on "Smart" Metering - The New PURPA Ratemaking Standard §111(d) (14)" was held on November 30th where the presenter discussed various quantitative, economic benefits from the implementation of smart metering in addition to the possible benefits of more efficient use of energy resources. Attachment II includes excerpts from the slide presentation that refers to the development of a business case for smart metering.

ANALYSIS

The Division intends to make recommendations on each of the standards. However, we are making our recommendations on this standard first since it contains language that implies that some action is required 18 months after implementation of EPAct 2005. In general, EPAct 2005 requires state commissions and utilities to begin consideration of the standards within 2 years and to complete the consideration and make a decision on whether or not to adopt the standards within three years (by August 8, 2008). However, the standard for Smart Metering states the following: “Not later than 18 months after the date of enactment of this paragraph, each electric utility shall offer each of its customer classes, and provide individual customers upon customer request, a time-based rate schedule ...” By making our recommendation now, we hope to provide the Commission enough information that it can make some determination by February 8, 2007, 18 months after the Law went into effect.

The Law allows states to make the determination that prior state actions have provided an equivalent standard that is already in place. The Smart Meter standard requires a more specific method for determining whether prior state actions have resulted in an equivalent standard. Prior state actions are only applicable to this standard if:

- the State already implemented the standard or a comparable standard;
- the proceeding considering implementation of the standard or comparable standard was within the previous 3 years; or
- the State’s legislature voted on implementation of the standard or comparable standard within the previous three years.

The Division does not believe that any equivalent standard exists. Therefore we have made the recommendation that the Commission act on this standard and that it not implement the standard as written. The cost and benefits of implementing the standard for various customer classes are not known at this time. Analysis is needed to determine what type of demand response meters and programs to what class of customers would be most effective. Further, the language of the standard as written implies that utilities would be required implement the standard by February 8, 2007 not giving enough time for consideration of the best way to do so.

Purposes of the Standard

The purpose of Title I of PURPA, as stated in the 1978 law, was to encourage: 1) conservation of energy supplied by an electric utility; 2) optimization of the efficient use of facilities and resources by electric utilities; and 3) equitable rates to consumers. The Smart Metering standard would appear to particularly address the first two purposes.

Smart Metering could support the following goals:

- Reduced peak load demand
- Increased reliability
- More efficient use of current capacity

- Reduced total demand
- Mitigated price spikes
- Mitigated market power
- Lower consumer bills
- Reduced emissions
- Cost based rates

Identified economic benefits include:

- Lower ongoing costs for meter reading (labor, vehicles, bill processing etc.)
- More accurate meter reads
- Tamper and theft detection
- On demand reads
- Disconnect/Connect labor
- Outage response – greater accuracy in pinpointing outages

Additional Analysis Recommended

The benefits possible from smart meters lead us to the conclusion that further analysis would be beneficial. Analysis is needed to see if the possible benefits are achievable and to determine the cost of such implementation. Some of the costs identified are:

- Investments in technology and administration to implement
- Consumer education – changing consumer behavior to gain benefits
- Balancing of risk, inconvenience, production interruption

In addition, analysis is needed to determine what type of demand response programs (TOU, CPP, RTP) programs to what class of customers would be most effective, whether the benefit of providing such service would outweigh the cost, whether other methods of meeting the goals described above would be more cost effective, and if an equivalent standard is desirable for electric utilities in Utah.

cc: Committee of Consumer Services
Dave Taylor, PacifiCorp

SEC. 1252 SMART METERING**(14) TIME-BASED METERING AND COMMUNICATIONS.**

(A) Not later than 18 months after the date of enactment (February 8, 2007) each electric utility shall offer each of its 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 cost of generating and purchasing electricity at the wholesale level. The time-based rate schedule shall enable the electric consumer to manage energy use and cost through advanced metering and communications technology.

(B) The types of time-based rate schedules that may be offered under the schedule referred to above include, among others –

- v) time-of-use pricing whereby electricity prices are set for a specific time period on an advance or forward basis, typically not changing more often than twice a year, based on the utility's cost of generating and/or purchasing such electricity at the wholesale level for the benefit of the consumer. Prices paid for energy consumed during these periods shall be pre-established and known to consumers in advance of such consumption, allowing them to vary their demand and usage in response to such prices and manage their energy costs by shifting usage to a lower cost period or reducing their consumption overall;
- vi) critical peak pricing whereby time-of-use prices are in effect except for certain peak days, when prices may reflect the costs of generating and/or purchasing electricity at the wholesale level and when consumers may receive additional discounts for reducing peak period energy consumption;
- vii) real-time pricing whereby electricity prices are set for a specific time period on an advanced or forward basis, reflecting the utility's cost of generating and/or purchasing electricity at the wholesale level, and may change as often as hourly; and
- viii) credits for consumers with large loads who enter into pre-established peak load reduction agreements that reduce a utility's planned capacity obligations.

(C) Each Electric utility subject to subparagraph (A) shall provide each customer requesting a time-based rate with time-based meter capable of enabling the utility and customer to offer and receive such rate, respectively.

(D) For purposes of implementing this paragraph, any reference contained in this section to the date of enactment of the Public Utility Regulatory Policies Act of 1978 shall be deemed to be a reference to the date of enactment of this paragraph.

- (E) In a State that permits third-party marketers to sell electric energy to retail electric consumers, such consumers shall be entitled to receive the same time-based metering and communications device and service as a retail electric consumer of the electric utility.
- (F) Notwithstanding subsections (b) and (c) of section 112, each State regulatory authority shall, not later than 18 months after the date of enactment of this paragraph conduct an investigation in accordance with section 115(i) and issue a decision whether it is appropriate to implement the standards set out in subparagraphs (A) and (C).