CHAPTER 17:
MODEL CONSERVATION STANDARDS

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INTRODUCTION

As directed by the Northwest Power Act, the Council has designed model conservation standards (MCS) to produce all electricity savings that are cost-effective for the region. The standards are also designed to be economically feasible for consumers, taking into account financial assistance from the Bonneville Power Administration and the region's utilities.

In addition to capturing all cost-effective power savings while maintaining consumer economic feasibility, the Council believes the approach used to achieve the model conservation standards should provide reliable savings to the power system. The Council also believes actions taken to achieve the standards should maintain, and possibly improve upon the occupant amenity levels (e.g., indoor air quality, comfort, window areas, architectural styles, and so forth) found in typical buildings constructed before the first standards were adopted in 1983.

The Council has previously adopted six model conservation standards. These include the standard for new electrically heated residential buildings, the standard for utility residential conservation programs, the standard for all new commercial buildings, the standard for utility commercial

conservation programs, the standard for conversions, and the standard for conservation programs not covered explicitly by the other model conservation standards.[1]

The MCS for the Seventh Power Plan has two main components. First, it provides the standard for conversions (similar to prior MCS); second, it expands upon the standard for conservation programs. This expansion has three subcomponents, including: (1) standards to achieve full participation in programs, (2) enhancement of codes and standards, and (3) incorporation of voltage optimization in distribution systems.

WHAT IS THE MCS?

Section 839b(f)1 of the Power Act states: "Model conservation standards to be included in the plan shall include, but not be limited to, standards applicable to (A) new and existing structures, (B) utility, customer, and governmental conservation programs, and (C) other consumer actions for achieving conservation."

The Council's Plan must contain a recommendation to the Bonneville Administrator regarding whether a utility's failure to achieve MCS savings should be subject to a surcharge on all of its power purchases from Bonneville. Surcharges may not be less than 10 percent, nor greater than 50 percent of Bonneville's rate.

The Act requires that the MCS be set at levels that achieve all regionally cost-effective power savings and that are economically feasible for consumers, taking into account financial assistance that may be made available through Bonneville.

OVERVIEW OF THE CURRENT MCS

The Power Act provides for broad application of the MCS. In the earlier plans, a strong emphasis was needed to improve residential and commercial building construction practices beyond the existing codes. Since the first MCS, all four states within the Northwest have adopted strong energy codes.

Since there are few cost-effective measures beyond current and proposed building energy codes in the region, the Seventh Power Plan MCS focuses on the other aspects of the provision. The two broad areas include provisions for converting to an electric space or water heating system from another fuel, and utility program standards. The fuel conversion standard is the same as in the Sixth Power Plan. The utility conservation program standards are also the same as in the Sixth Power Plan at the high level, but include more specifics to ensure adoption and implementation.

[1] This chapter supersedes the Council's previous model conservation standards and surcharge methodology.

CONVERSION TO ELECTRIC SPACE AND WATER HEATING

The model conservation standard for existing residential and commercial buildings converting to electric space conditioning or water heating systems is as follows: State or local governments or utilities should take actions through codes, service standards, user fees or alternative programs or a combination thereof to achieve electric power savings from such buildings. These savings should be comparable to those that would be achieved if each building converting to electric space conditioning or electric water heating were upgraded to include all regionally cost-effective electric space conditioning and electric water heating conservation measures.

CONSERVATION PROGRAM STANDARDS

This model conservation standard applies to all conservation actions except those covered by the standard for electric space conditioning and electric water heating system conversions. This model conservation standard is as follows: All conservation actions or programs should be implemented in a manner consistent with the long-term goals of the region's electrical power system. In order to achieve this goal, the following objectives should be met:

1. Conservation acquisition programs should be designed to capture all regionally cost-effective conservation savings in a manner that does not create lost-opportunity resources. A lost-opportunity resource is a conservation measure that, due to physical or institutional characteristics, will lose its cost-effectiveness unless actions are taken now to develop it or hold it for future use.
2. Conservation acquisition programs should be designed to take advantage of naturally occurring "windows of opportunity" during which conservation potential can be secured by matching the conservation acquisitions to the schedule of the host facilities or to take advantage of market trends. In industrial plants, for example, retrofit activities can match the plant's scheduled downtime or equipment replacement; in the commercial sector, measures can be installed at the time of renovation or remodel.
3. Conservation acquisition programs should be designed to secure all measures in the most cost-efficient manner possible.
4. Conservation acquisitions programs should be targeted at conservation opportunities that are not anticipated to be developed by consumers.
5. Conservation acquisition programs should be designed to ensure that regionally cost-effective levels of efficiency are economically feasible for the consumer.
6. Conservation acquisition programs should be designed so that their benefits are distributed equitably.
7. Conservation acquisition programs should be designed to maintain or enhance environmental quality. Acquisition of conservation measures that result in environmental degradation should be avoided or minimized.
8. Conservation acquisition programs should be designed to enhance the region's ability to refine and improve programs as they evolve.

To assess whether these eight objectives are being met, Bonneville, the region's utilities and/or the Energy Trust of Oregon should report to the Council on the following:

1. Full participation in programs
2. Enhancement of codes and standards through program design
3. Voltage optimization.

Full Participation in Programs

The data collected by the Council through the Regional Technical Forum's Regional Conservation Progress report show that the region has exceeded the Council Plan's targets every year since 2005. However, this does not necessary mean that the region has captured all-cost effective savings identified in the Plan. In pursuing all cost-effective conservation, there are segments of the population that typically participate in programs at lower rates than others, often due to cost barriers. These segments can be classified as "hard to reach (HTR)" or "underserved". Included in the HTR category are low-income customers. However, customer classes unable or unwilling to participate in conservation programs extend beyond the official low-income designation and may include moderate income, multifamily, small businesses, commercial customers who are tenants, rural, and large industrial customers in a small utility service area.

The up-front cost of higher efficiency is often a significant barrier to HTR consumer adoption of energy-efficient measures. Regional entities (including Bonneville, utilities, Energy Trust of Oregon, NEEA) frequently provide financial incentives to consumers to overcome this barrier. With few exceptions, these financial incentives only cover a portion of the measure's cost. The requirement for "cost-sharing" and other program design elements or marketing approaches limits the population of consumers who can participate in energy efficiency programs and thus the amount cost-effective savings that can be achieved. A region-wide assessment is needed to determine whether significant cost-effective energy savings opportunities are being lost due to current program designs, particularly, but not limited to those that require consumer financial participation. The standard thus requires that utilities should secure proportional savings from the HTR population, pursuant of items 1, 4, 5, and 6 above.

The first step in this standard is to classify the various HTR segments. The second step is to identify the HTR portion of customers by sector. Bonneville and its regional stakeholders should complete a report on these two aspects by the mid-2017.

Bonneville should then report on the portion of participants or savings by the HTR segments for the 2018 program year. If the participation from the HTR segments is less than its proportional share of the market, this report should include the strategy and recommendations for achieving the cost-effective savings from these segments. For example, recommendations may include alternate program delivery structures or that utilities should include finance programs. The regional stakeholders should actively undertake these recommendations and Bonneville should continue to report on HTR participation in subsequent years, recognizing the original recommendations may need to be revisited and potentially revised.

Enhance Codes and Standards

One of the most cost-efficient ways to ensure adoption of conservation measures is through their enactment as codes and standards. States and programs should continue to work to provide conservation options that could be included in future code and standards updates, pursuant of item 3 above. Some examples include:

- Commercial whole building energy reductions – include variable refrigerant flow systems, low lighting power densities, and dedicated outside air systems
- Industrial processes, including indoor agriculture and data centers – develop best practice guides to run processes as efficiently as possible
- Federal standards test procedures – develop data in support of the federal standard test procedures

For the Seventh Power Plan mid-term review, NEEA should work with regional stakeholders to provide an update that demonstrates progress in support of code and standards enhancements. Progress may be evident through updated state codes, revised federal test procedures utilizing data from the region, pilot program initiation and results, and regional input on federal standards updates.

Voltage Optimization

Significant savings could be garnered by optimizing the distribution system using technologies such as Volt/VAR Optimization (VVO) or conservation voltage regulation (CVR), per the analysis of distribution system savings for the conservation supply curves (see Chapter 12 and Appendix G). To garner these savings, pursuant of items 3 and 4 above. Bonneville should operate a program that will evaluate each of its utility's circuits to determine which could be optimized. The utilities should then implement any cost-effective upgrades within a reasonable timeframe.

SURCHARGE RECOMMENDATION

The Council does not recommend that the model conservation standards be subject to surcharge under Section 4(f) (2) of the Act.

The Council expects that Bonneville and the region's utilities will accomplish conservation resource development goals established in this Plan. If Council recommendations on the role of Bonneville are adopted, utility incentives to pursue all cost-effective conservation should improve. Fewer customers would be dependent on Bonneville for load growth and those that are would face wholesale prices that reflect the full marginal cost of meeting load growth. However, while these changes would lessen the rationale for a surcharge, the Council recognizes that they would not eliminate all barriers to utility development of programs to capture all cost-effective conservation.

The Council recognizes that while conservation represents the lowest life cycle cost option for meeting the region's electricity service needs, utilities face real barriers to pursuing its development aggressively. Investments in cost-effective conservation will reduce long-run utility costs and revenue requirements, but may place short-term upward pressure on rates. Bonneville has committed to ensure that the "public system" meet its share of the Seventh Plan's conservation

targets. It is working with its customers to put in place programs and rate structures designed to achieve this objective. However, should an individual utility fail to meet its share of the regional conservation goal, then Bonneville may need the ability to recover the cost of securing those savings. In this instance the Council may wish to recommend that the Administrator be granted the authority to place a surcharge on that customer's rates to recover those costs.

The Council intends to continue to track regional progress toward the Plan's conservation goals and will review this recommendation, should accomplishment of these goals appear to be in jeopardy.

Surcharge Methodology

Section 4(f)(2) of the Northwest Power Act provides for Council recommendation of a 10-percent to 50-percent surcharge on Bonneville customers for those portions of their regional loads that are within states or political subdivisions that have not, or on customers who have not, implemented conservation measures that achieve savings of electricity comparable to those that would be obtained under the model conservation standards. The purpose of the surcharge is twofold: 1) to recover costs imposed on the region's electric system by failure to adopt the model conservation standards or achieve equivalent electricity savings; and 2) to provide a strong incentive to utilities and state and local jurisdictions to adopt and enforce the standards or comparable alternatives. The surcharge mechanism in the Act was intended to ensure that Bonneville's utility customers were not shielded from paying the full marginal cost of meeting load growth. As stated above, the Council does not recommend that the Administrator invoke the surcharge provisions of the Act at this time. However, the Act requires that the Council's plan set forth a methodology for surcharge calculation for Bonneville's administrator to follow.

Should the Council alter its current recommendation to authorize the Bonneville administrator to impose surcharges, the method for calculation is set out below.

Identification of Customers Subject to Surcharge

The administrator should identify those customers, states or political subdivisions that have failed to comply with the model conservation standards for utility residential and commercial conservation programs.

Calculation of Surcharge

The annual surcharge for non-complying customers or customers in non-complying jurisdictions is to be calculated by the Bonneville administrator as follows:

1. If the customer is purchasing firm power from Bonneville under a power sales contract and is not exchanging under a residential purchase and sales agreement, the surcharge is 10 percent of the cost to the customer of all firm power purchased from Bonneville under the power sales contract for that portion of the customer's load in jurisdictions not implementing the model conservation standards or comparable programs.

2. If the customer is not purchasing firm power from Bonneville under a power sales contract, but is exchanging (or is deemed to be exchanging) under a residential purchase and sales agreement, the

surcharge is 10 percent of the cost to the customer of the power purchased (or deemed to be purchased) from Bonneville in the exchange for that portion of the customer's load in jurisdictions not implementing the model conservation standards or comparable programs.

If the customer is purchasing firm power from Bonneville under a power sales contract and also is exchanging (or is deemed to be exchanging) under a residential purchase and sales agreement, the surcharge is: a) 10 percent of the cost to the customer of firm power purchased under the power sales contract; plus b) 10 percent of the cost to the customer of power purchased from Bonneville in the exchange (or deemed to be purchased) multiplied by the fraction of the utility's exchange load originally served by the utility's own resources

Evaluation of Alternatives and Electricity Savings

A method of determining the estimated electrical energy savings of an alternative conservation plan should be developed in consultation with the Council and included in Bonneville's policy to implement the surcharge.