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TACOMA PUBLIC UTILITIES

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Comments of Tacoma Power Regarding: Council Document 7-2007 May 2007

Dear Mark:

The Northwest Power and Conservation Council (the Council) released a paper in May of 2007 entitled: Achievable Savings - A Retrospective Look at the Northwest Power and Conservation Council's Conservation Planning Assumptions. That document provides useful insights on how successful the region was to acquire conservation, and perhaps just as important, how successful the Council was at identifying the specific sources of the savings.

Background

Because the Council methodology and assumptions are prominent in the proposed WAC 194-37 language, it is critical to understand the basis for assumptions as Washington State moves forward with the rule making process. This report from the Council is therefore important to the rule making process.

Tacoma Power has considerable experience and familiarity with the evolution of conservation planning and acquisition since the publication of the first Power Plan in 1983. That experience, coupled with new insights gleaned from this report has raised new concerns regarding the application of certain methodological assumptions to individual utility plans. It is our hope that our specific comments will enlighten the Council through several illustrative examples that will lead to an obvious conclusion: *The basis for and use of an 85 percent achievability factor prospectively is not empirically supportable.*

General Comment

The Council document notes on page 7 of the report that "It is not possible to directly compare this [actual savings] value with the "Achievable potential" in the 1983 plan..." In the same paragraph, the following statement: "Therefore, any comparison between the

1983 Plan's conservation goals, which were forecast to be achievable over 20 years, and the actual results would be misleading." Despite the comparisons warning, the Council document suggests that the 85 percent achievable assumption is reasonable. We believe the report contains a significant number of inconsistencies and assertions that undermine the reasonableness of the case the Council hopes to make.

Tacoma Power has identified the following key issues for consideration which are further developed below.

- The report provides several examples and conclusions with the assertion that these represent empirical evidence for specific findings supporting an 85 percent achievable factor. Tacoma Power suggests that in most instances, the supporting documentation is anecdotal and does not represent empirical rigor.
- Codes and standards are a considerable factor contributing to the ultimate penetration percentage of specific measures, yet they are generally beyond the direct influence of utilities. Therefore, the presumption that individual utilities can achieve results from codes is not guaranteed.
- The report identified programs or measures as a part of the 1983 Plan did not achieve 85 percent penetration as planned, yet the Council asserts 85 percent is appropriate citing measures not identified in the 1983 Plan.
- Many important details of the Hood River project that weighed heavily on the conclusion for the 85 percent achievable factor, if identified, would provide significant evidence that 85 percent is too high.

Use of Empirical Evidence

The document supports this assertion by referring to empirical evidence related to specific estimates of achievable potential with what actually occurred.
Empirical evidence is an important feature of this report. An empirical method is based on direct observation. We would like to think that the empirical methods used would be based on comparison of the specific measures identified in the 1983 Council plan and the accomplishment for the 20 years. For example, the residential lighting accomplishments should be in the context of the same technologies identified in the 1983 plan. In several examples unfortunately, the Council paper notes that the estimated achievable potential were based on one set of technologies and the accomplishments on completely different technologies. To our understanding, such a methodology is closer to anecdotal evidence rather than empirical evidence. It also calls into question how achievable a council estimate could be if it had to be applied immediately in the course of one year increments such as WAC 194-37 requires.

As noted on the footnote of page 7, "While the Council viewed its 85 percent goal as having limited risk because its power plans are updated every five years. If progress toward the goal is slow, then adjustments to the timing of the development of other resource can be made." It would seem that the Council is not completely sure what

percentage of the potential is achievable during a five year period. With the current rules of WAC 194-37, Washington utilities do not have this luxury because of the annual targets and the $50 per MWh fine imposed if they do not acquire the annual targets.

Role of Building Codes

The Council correctly points out that building code improvements did contribute to exceeding the 85 percent accomplishments. It could be said that the Washington state building codes for both residential and commercial new construction resulted in a 100 percent achievable factor since 1992. While utilities were involved with promoting Model Conservation Standards (MCS) that later became guides to the new state code, it is because of the Washington state code requirement that the council can claim this specific victory.

Changes in appliance standards have resulted in a similar victory mentioned by the Council. In the 1983 plan, the Council lumped appliances, and lights in the "Other" category and it accounted for about 25 percent of the residential sector potential.

While utility programs are an important part of ushering the early adoption of more efficient appliance technologies, it is also generally accepted that appliance standards are responsible for bringing in the lion share of this type of savings. In this regard, from a June 2004 letter to DOE on appliance standards by ACEEE Executive Director Steven Nadel, NRDC Senior Scientist David Goldstein, NWPCC executive Director Stephen Crow among others stated: "Appliance energy efficiency standards are the single most effective tool for reducing energy usage while still providing consumers with reliable and affordable energy services." According to this letter, utility program offerings were not bringing in the lions share of the appliance savings.

The National Appliance Energy Conservation Act (NAECA) of 1987 established energy efficiency standards for 11 types of consumer products including domestic refrigerator/freezers (NAECA 1987). The legislation requires the Department of Energy (DOE) to consider new or amended standards for these and other types of products at specified times. New federal standards went into place1990, 1993, and 2001. The average energy consumption of refrigerators and freezers has steadily decreased over the past two decades resulting in significant energy savings. It would seem that NAECA had more to do with the steady decrease in appliance energy use than any local utility or regional factor.

Page 14 of the Council's review of the commercial sector is as explicit as can be about what delivery mechanism brought in commercial savings. "The data we have for new commercial buildings tell a similar story; today's energy codes far exceed the achievable penetration rates identified by the Council twenty years ago." While utilities did participate in ushering in these new codes by MCS promotion and incentives, the utilities

did not acquire the lion share of the savings. Indeed, even with incentives, it was difficult for utilities to convince the commercial sector to take advantage of the offerings.

Specifically Planned Measures versus Realized Measures

According to the Council report, the 1983 Council plan assumed standard linear fluorescents could replace incandescent lights and result in an average savings of 170 kWh per home by 2002. According to the paper, while the region fell short of the 85 percent goal by about 50 percent, the timing of even this savings was significantly delayed because residential customers essentially waited until the Compact Fluorescent Lamp became commercially acceptable as reported on page 14 of the Council paper. The importance of this observation is that the council developed a conservation target in 1983 that was essentially not possible given the current capability or just as important …the acceptability of the equipment.

There are conservation measures in the 5th Power Plan such as heat pump water heaters that, given current rules of WAC 194-37, the Council calculator would make a utility responsible for acquiring savings. This means Washington utilities would be responsible for savings that manufacturers have not been able to viably produce at a commercial scale. The heat pump water heater has been in the Council plans since 1983 and this particular measure represented a significant share of the residential potential. Yet even now the manufacturers, consumers, utilities, and the many efficiency organizations have not found a common ground to make this a commercially viable measure.

The residential weatherization program may be one of the most pure utility funded conservation programs to use as an example for the Council report. The empirical evidence provided in the Council document took the form of an assumption that because the number of annual accomplishments is shrinking, the region must be close to reaching the market saturation (presumably 85 percent). For so much at stake related to WAC 194-37 it seems that the process to prove that 85 percent is achievable for weatherization is rather casual. If a utility were to make such a claim during the 2010-2019 period, it would seem unlikely that it would receive confirmation from the state auditor.

Important Hood River Project Details

The weatherization program was a high profile program in the early 1980s when the Hood River Conservation Project set off to determine how much conservation was achievable. There are details of this research project that are rarely discussed and over the years have faded into dusty research documents on BPA shelves. Some of these details were outlined in the Hood River Conservation Project Profile #12. Among those details are a set of circumstances that could have affected response rates and the calculation process that derived the 85 percent assumption.

- It acknowledges that just the year before the research project began, the investor owned utility serving a large percentage of the research area doubled

its rates to about $0.065 per kWh, then several years later reduced rates to about $0.055 per kWh. Apparently it was never considered if this affected response rates. Adjusted for inflation, these rates today would have been the equivalent of about $0.13 per kWh.

- The estimated energy savings for each of these major measure was likely overstated compared to current program assumptions. Could these over estimated savings estimates have affected the decision process of customers and reduced the outcomes?
- It acknowledges that Hood River was selected because it was believed that the community was economically stable and its residents had permanency. This could be a distinct difference compared to a significant portion of many utility service areas.
- It outlines how the 85 percent was derived, based on installing at a minimum only one major measure in a dwelling. By the current methods used to determine 85 percent penetration, Hood River would have failed because they did not achieve 85 percent of the conservation potential.

Other Facts of Interest

On the other end of the spectrum, the Council report notes the excellent response of energy efficient manufactured housing. This review contains detailed annual activity and makes the observation that there is a linkage between energy efficiency and consumer preferences. Interestingly, the report also mentions that this measure was not in the 1983 plan. With current rules for WAC 194-37, these excellent accomplishments would not have received the credit.

Conclusion

Tacoma Power's assessment of the Council's report is that it does not provide a clear case for use of an 85 percent achievable factor by any individual utility in its conservation planning. Under WAC 194-37, this standard will likely lead to unrealistically high conservation acquisition targets for individual utilities. The evidence for this statement is easily proved with a relevant analysis of historical penetration rates based on the actual plan. This conclusion is illustrated by the fact that a conservation potential assessment only considers commercially available and economic measures at the time of the assessment.

Tacoma recently undertook a national literature review of what were considered exemplary conservation potential assessments and conducted a survey with nationally known conservation experts. While these are considered anecdotal, it is interesting to note that the reported percent achievable was less than the Power Council 85 percent assumption. The expected achievable percentage was found to vary with the time period and utility incentive level. In general, findings from the survey of conservation experts indicate that a ten year-100 percent incentive would yield an expected 58 percent

achievable factor. A 20 year-100 percent incentive would yield an expected 71 percent achievable factor.

Tacoma Power suggests the Council take a closer look that the facts of the Hood River Project and reassess their support for the 85 percent factor.

Thank you for the opportunity to comment.

Sinerely,

William A. Gaines
Superintendent/COO