
**Review of Aquila, Inc. d/b/a Aquila Networks-MPS and Aquila Networks – L & P
Electric Utility Resource Planning
Compliance Filing
Case No. EO-2007-0298**

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June 19, 2007

PREFACE OF THE OFFICE OF THE PUBLIC COUNSEL

This report is filed by the Office of the Public Counsel (Public Counsel or OPC) pursuant to 4 CSR 240-22.080(6), which provides that Public Counsel may file a report that identifies deficiencies in a utility's compliance with the provisions of Chapter 22, and any other deficiencies that cause the utility's resource acquisition strategy to fail to meet the fundamental objectives of the planning process as set forth at 4 CSR 240-22.010(2).

4 CSR 240-22.080(8) requires Public Counsel to work with Aquila, Inc. d/b/a Aquila Networks-MPS and Aquila Networks – L & P (Aquila or the Company) in an attempt to reach an agreement, within forty-five days of the date that this report was filed, on a plan to remedy deficiencies. Should Public Counsel and Aquila be unable to reach such an agreement, Public Counsel recommends that the Commission find, pursuant to 4 CSR 240-22.080(13), that Aquila's filing does not comply with the requirements of Chapter 22 and that Aquila's resource acquisition strategy does not meet the fundamental objectives of the planning process as set forth in 4 CSR 240-22.010(2)(A)-(C).

The Stipulation and Agreement As to Certain Issues approved by the Commission in its April 12, 2007 order in Case No. ER-2007-0004 addressed demand-side issues and created a connection between the resolution of demand-side issues in that case with the resolution of demand-side issues in this case. Section 11 (page 7) of the Stipulation and Agreement As to Certain Issues states that:

Aquila will only implement the programs shown in Case No. EO-2007-0298 to be cost-effective at adequate funding levels, with a funding goal of one percent of its annual revenues to implement cost-effective energy efficiency programs by 2010. If, in Aquila's pending integrated resource planning case, Case No. EO-2007-0298, the parties are unable to agree by October 31, 2007, that DSM programs have been appropriately screened, Aquila will continue the current programs with the same funding levels as stipulated to in Case No. ER-2005-0436, until such time as an alternative agreement is reached or disagreements are resolved by the Commission in Case No. EO-2007-0298.

This report is less comprehensive and much shorter than the reports that Public Counsel submitted in the mid 1990s shortly after the IPR rule went into effect. The abbreviated nature of this report should not be construed to reflect any changes in OPC's view that the formal IRP process is important to consumers. Instead, the abbreviated nature of this report is due the finite resources that OPC has for IRP analysis and other Commission issues and activities that are currently taking place, not the least of which are the large number of rate cases that have been processed recently at the Commission. In order to provide meaningful feedback on Aquila's IRP filing, we have focused our attention primarily on those areas where the greatest deficiencies occurred in Aquila's filing. Public Counsel has not attempted to address the load forecasting portion of Aquila's filing in this report. Therefore, no conclusions should be drawn regarding OPC's views of the degree to which Aquila's filing in the forecasting area complies with the provisions in Chapter 22.

Public Counsel's List of Deficiencies

- 1. 4 CSR 240-22.040(9)(A) - Failure to comply with filing requirements.** Aquila used an EPRI supply-side resource screening tool in its attempt to comply with the supply-side planning process set forth in 4 CSR 240-22.040(2). Table 2-6 on page 20 of Part 2 states why certain resources were excluded from further consideration but it does not include an explanation of why biomass was excluded as required by 4 CSR 240-22.040(9)(A)3. Aquila's identification and analysis of supply-side options did not include opportunities for "life extension and refurbishment at existing plants" as required by 4 CSR 240-22.040(1). Instead of identifying and analyzing such opportunities, page 5 of Part 2 only refers to an ongoing Black and Veatch study that is apparently limited in scope to reviewing opportunities to make room for new generation capacity additions.
- 2. 4 CSR 240-22.050(2) - Failure to follow IRP rules on avoided cost calculations and failure to apply the appropriate avoided capacity and energy costs in the screening of demand-side resources.** Aquila's estimate of avoided capacity costs was based on a \$100/kW/year figure provided by Aquila's consultant Quantec (see Section 3.1.2) and there was no support to show how Quantec arrived at this high estimate for avoided capacity costs. Aquila undervalued energy efficiency measures and programs by not giving these programs any cost saving benefits associated with avoided capacity costs. This would be especially significant for a program like the air conditioner replacement program which would result in capacity savings at the time of system peak. The cost saving benefits of demand response programs may have been overvalued by the high \$100/kW/year avoided cost figure that was used for screening them but some of these programs would also have energy savings associated with them during peak periods when energy prices are generally high and these savings were not included in the avoided costs benefits that were calculated for demand response programs.
- 3. 4 CSR 240-22.050(11)(B) - Failure to provide all end use measure costs as required by 4 CSR 240-22.050(11)(B).** The residential and commercial measure information provided in Appendix B did not include measure cost information.
- 4. 4 CSR 240-22.050(9) – Aquila used a questionable and novel method to reflect program savings and costs over the 20 year planning horizon.** Rather than using actual costs and benefits over the life of the measures included in programs, Aquila assumed that savings would be ongoing for the full 20 year period regardless of the economic life of the measures and assumed that measures of an equivalent efficiency level would be chosen by participants upon decay/retirement of the measures that were delivered as part of the demand-side program. This methodology is not in compliance with the rule and needs further study to determine whether it yields realistic results.
- 5. 4 CSR 240-22.050 (3) and (9) – Aquila used an unreasonably high baseline for the screening of building shell measures and the programs that contain those measures by assuming that the new construction of residential dwellings within Aquila's service territory are being largely built to standards consistent with the 2003 International Energy Conservation Code for 2003.** This unrealistic assumption

led to an undervaluation of the cost effectiveness of building shell measures for new construction and for the programs that contain these measures.

6. 4 CSR 240-22.050 (3) and (9) – Aquila used a flawed methodology to assess the cost effectiveness of direct load control of residential air conditioners as a demand-side resource. Aquila’s consultant, Quantec, included redundant equipment as part of the measure cost in a manner that displayed a surprising lack of basic understanding of the various ways that direct load control can be implemented for residential customers. Not surprisingly, use of redundant equipment led to the false conclusion that a direct load control program would not be cost effective.

7. 4 CSR 240-22.050 (6) – Aquila failed to use best practices to inform its design of a residential AC energy efficiency program. Aquila should have looked at Manual J (optimizing of AC sizing) training and/or requirements in conjunction with providing incentives for the installation of more efficient residential air conditioning equipment.

8. 4 CSR 240-22.060(1) and 4 CSR 240-22.060(3) - Failure to model DSM efficiency programs and DSM demand response programs separately in alternative plans that included DSM. OPC does not dispute the value of modeling both DSM efficiency programs and DSM demand response programs together in alternative plans. However, in order to fully evaluate the interactions of various efficiency programs and demand response programs with different supply-side portfolios, it is necessary to model these resources separately in integrated and risk analysis. Modeling efficiency and demand response programs separately would also provide valuable information about the risk mitigation benefits of the different types of programs and the impact on average rates and PVRR of the different types of programs. This information can be compared to the demand-side resource screening results to make sure that the screening results are a valid indication of economic benefits of using the demand-side resources as part of an integrated portfolio of resources that contains both demand and supply-side resources.

9. 4 CSR 240-22.060(3) and 4 CSR 240-22.010(2)(A) - Failure to construct Alternative Plans containing both renewable resources and an increased level of DSM resources. One of the alternative plans that Aquila created was a “green plan.” While this plan relied more heavily on low and no carbon emitting supply-side resources, it contained the same level of demand-side resources that were included in all of the other alternative resource plans. In doing so, Aquila failed to provide equivalent treatment to supply and demand-side resources and failed to properly construct plans designed to achieve one or more of the planning objectives identified in 4 CSR 240-22.010(2).

10. 4 CSR 240-22.060(3) and 4 CSR 240-22.010(2)(A) - Failure to construct a wide range of alternative resource plans to be reasonably certain that the preferred plan that is ultimately chosen will result in the least cost plan subject to risk and other considerations. Aquila failed to create an alternative plan that makes use of new PPAs (purchased power agreements) over the entire planning horizon (2007 - 2026) since it constrained most of its plans to limit the use of PPAs to the time period of 2006 – 2009 even though Aquila is not large enough to be able to construct base load generation

resources large enough to fully capture economies of scale. The only Aquila alternative plan that looked at PPAs beyond 2009 limited the duration of PPAs to 2012. Therefore, Aquila failed to properly construct plans that include one of the basic ingredients (long-term PPAs) that might be necessary to best satisfy the planning objectives identified in 4 CSR 240-22.010(2).

11. 4 CSR 240-22.060(6)(F) - Failure to identify and analyze load building programs as required by 4 CSR 240-22.060 (5) and (6)(F). Aquila failed to identify and analyze existing and planned load building programs as required by the rule. Aquila already has a fixed bill pilot program and it was in the process of developing a proposal for an expansion of this program at the time it made its IRP filing. Aquila's existing fixed bill pilot tariff contain an "bill formula" component for "kWh growth" which is intended to approximate the average increase in customer loads that occurs when a customer moves from the standard residential tariff to the fixed bill tariff. In Case No. EO-2007-0395, Aquila is proposing to expand its existing fixed bill pilot program by making it more widely available and the proposed tariff in this case contains a similar kWh growth factor.

12. 4 CSR 240-22.070(1) and (5) - Failure to explicitly state and document the subjective probabilities that utility decision makers assign to each of these uncertain factors as required by 4 CSR 240-22.070(1) and (5). Aquila's attempt to satisfy this requirement consisted mostly of its statement in Section 5.2.2 that "most of the ranges for values of key variables were developed through discussions with internal and external subject matter experts" and the information provided in Table 5-1. Utility decision-makers were not identified in Aquila's filing and based on the information provided in the filing, they do not appear to have identified which uncertain factors are critical or made determinations about which subjective probabilities should be assigned to these factors.

13. 4 CSR 240-22.070(2) - Failure to perform analysis required by this section of the rule for each of the uncertain factors listed in (A) – (L) of 4 CSR 240-22.070(2) and document it as required by 4 CSR 240-22.070(11). Aquila's discussion of reporting requirements for 4 CSR 240-22.070(11)(A)(2) states that the required information can be found in Sections 5.1 and 5.2 of its IRP but the critical uncertain factors that should be determined by the Company's analysis are not explicitly identified in either of these sections.

14. 4 CSR 240-22.070(6) - Failure to select a preferred resource plan from among the alternative plans that have been analyzed pursuant to the requirements of 4 CSR 240-22.060 and sections (1) -(5) of this rule. The preferred plan that was chosen by Aquila (see Section 5.4.2) was not one of the alternative plans that were evaluated as part of Aquila's IRP process. Instead, the preferred plan was "a combination of the features of several of the ARPs identified in Part 4." If Aquila wanted to select a preferred plan that was "a combination of the features of several of the ARPs identified in Part 4", then it should have created such a plan as one of the alternative plans from the

start of the process so that the plan would go through the full process of IRP analysis required by the rule before being selected as the preferred plan.

15. 4 CSR 240-22.070(9) - Failure to create an implementation plan for DSM programs. Aquila's discussion of reporting requirements for 4 CSR 240-22.070(11)(G) states that the required information can be found in Section 5.5 of its IRP but this section does not include the DSM implementation plan information required by 4 CSR 240-22.070(9)(B). Section 5.5 does not include a schedule and description of ongoing and planned demand-side programs, program evaluations and research activities as required by the rule.

16. 4 CSR 240-22.070(10)(C) - Failure to specify the ranges or combinations of outcomes for the critical uncertain factors and explain how limits were determined. Since the company did not explicitly identify critical uncertain factors as required by the rule it could not satisfy this requirement. Aquila's "sensitivity analysis of key variables" in section 5.4.5 indicates that it believes "emissions costs" are a "key variable" but the Company did not analyze the performance of its "green plan" to see how it performed relative to other alternative plans under a high emissions cost scenario. Aquila's failure to perform this analysis means that it does not have the information needed to know whether higher than expected emissions costs would cause it to consider moving from its preferred plan towards a more "green" plan or how robust its preferred plan is for a range of possible outcomes for this "key variable" compared to its "green plan." As cited in other deficiency descriptions, Aquila's failure to include a more aggressive portfolio of DSM programs in its "green plan" would have limited the value of the sensitivity analysis, even if Aquila had performed the analysis required by 4 CSR 240-22.070(10)(C).

17. 4 CSR 240-22.070(10)(D) - Failure to specify a set of contingency options for the critical uncertain factors as part of an officially adopted resources acquisition strategy. There is no discussion of contingency options in section 5.5.1 of Aquila's IRP. One of the possible contingency options in this area, moving towards implementation of a more aggressive portfolio of DSM programs, is not included because Aquila did not include such a portfolio in any of its alternative resource plans. While Aquila did list variations in emissions costs and DSM impacts as "Key Uncertainty Variables" in Table 5-1, the Company failed to specify which demand-side contingency options would be implemented if emissions costs or DSM impacts varied greatly from expected levels. Similarly, the Company failed to specify which supply-side contingency options would be implemented if emissions costs or natural gas costs varied greatly from expected levels.

18. 4 CSR 240-22.070(10)(E) - Failure to create and provide full documentation of a credible process for monitoring the critical uncertain factors and reporting to managers/officers. On page 25 of Part 5 of Aquila's IRP, it lists 4 activities that it will perform over the implementation period that are related to the monitoring of uncertain factors. However, this short list is too limited to be credible. There is no information about which individuals or groups within Aquila will be doing the monitoring or about

how the information gathered from the monitoring will be reported to Aquila's decision makers. Since Aquila failed to identify the "critical uncertain factors" as required by the rule, there is no way to determine whether these activities would in fact satisfy the requirement that such factors be monitored. For example, one would expect that cost of capital, construction costs for various generation options, and natural gas prices would likely be critical uncertain factors for Aquila, but there is no credible process for monitoring these factors and reporting to managers/officers of the Company.

19. 4 CSR 240-22.080(7) - Failure to make workpapers and other documentation available to Public Counsel as required by the rule. Aquila did not have workpapers that documented all of the inputs that is used in its supply-side screening analysis. Without this level of transparency, it is impossible to for those reviewing the Company's plan to determine whether or not the analysis is credible.