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Attorney for the Commission Staff

BEFORE THE IDAHO PUBLIC UTILITIES COMMISSION

ALLEN LAKE,)	
Complainant,)	CASE NO. ATL-E-09-1
)	
vs.)	
)	COMMENTS OF THE
ATLANTA POWER COMPANY,)	COMMISSION STAFF
Respondent.)	
)	

The Staff of the Idaho Public Utilities Commission, by and through its Attorney of Record, Donald L. Howell II, Deputy Attorney General, submits the following comments.

BACKGROUND

In April of 2009, Mr. Allen Lake, a customer of Atlanta Power Company, filed a complaint with the Commission alleging that the electric power he was receiving would not run his new dishwasher. He asserted that he had the appliance supplier go through the dishwasher and replace the controls and when that did not improve the situation, the supplier completely replaced the dishwasher. The problem persisted. At that point he and the supplier determined that the problem was associated with the quality of power being provided by Atlanta Power Company.

The Staff's response to the initial complaint was to treat it as an informal complaint, IDAPA 31.01.01.021. The Staff had several conversations with the customer and Mr. Israel Ray,

the President of Atlanta Power, to determine a course of action to address and hopefully resolve the problem. The Staff determined that a power quality analysis would be required to more specifically define the problem. In the process of determining who could do such a review and what the cost would be, two Idaho Power Company power quality engineers volunteered to do the study on their own time. The study was conducted on August 28, 2009, and a brief report was provided. The report addressed several safety and power quality issues.

One of the findings identified in the report was that system frequency varied approximately 10 cycles per second (cps) around an ideal 60 cps. Also, when the frequency dropped below 59 cps, the voltage dropped off significantly. Based upon these results, Staff believed that this voltage drop was the power quality problem that was causing the dishwasher malfunction.

The power system controls operate based on system frequency measured in cps. When system load increases, the turbine/generator slows causing system frequency to slow until the hydro-turbine's wicket gates open to let more water into the turbine. When load declines, the turbine/generator speed increases causing the system frequency to increase above 60 cps until the water flow is reduced by partially closing the wicket gates. The existing control system allows the operator to set high and low frequencies (above and below 60 cps) which cause a motor to open or close the wicket gates incrementally. The chain that connected the motor shaft to the wicket gate shaft had some play in it that was slowing the machines response to these frequency variations. Mr. Ray proposed to have a "tensioner" built to tighten the chain and reduce the response time to frequency changes. The process of designing, building and installing the tensioner took a few months.

Two things happened before the tensioner was installed. First, Atlanta power provided Mr. Lake with a plug-in meter that allowed him to monitor frequency at his home. He quickly determined that it was high frequency not low frequency that was turning off his dishwasher. But it was still a frequency-related problem and reducing system response time to frequency fluctuations still seemed like the correct thing to do. Second, Mr. Lake became concerned that Atlanta Power might not do anything about his dishwasher problem. He subsequently requested formal processing of his complaint which precipitated this formal complaint case.

After the tensioner was built and installed, the initial tests of the dishwasher showed or seemed to show some improvement. However, after a short period of time, Mr. Lake asserted that there had been little change.

The Commission accepted Mr. Lake's formal complaint and issued a summons in November of 2009, requiring Atlanta Power to respond. Atlanta Power did respond on December 15, 2009. The Company explained what had been done and committed to continue to work on the problem. Mr. Lake responded to Atlanta Power's comments on December 28, 2009, saying that the problem still existed. That brings us to where we are now.

STAFF REVIEW AND COMMENTS

Mr. Ray states that he plans to continue to work on the problem. One of the things that he may do next is to heat the chain drive system previously discussed. The chain drive is exposed to outside air temperatures. It seems that after the tensioner was installed and before the weather turned cold, there were fewer dishwasher problems. Possibly the lubricants thickened on the chain drive in colder weather and offset the gains in response time the tensioner provided.

The Staff has identified another solution specific to the dishwasher problem and discussed it with Mr. Lake and Mr. Ray. The solution is to purchase and install a double conversion uninterruptible power supply (UPS) on the dishwasher circuit in Mr. Lakes home. A double conversion UPS would convert Atlanta Power's AC electricity to DC, store it in batteries, then convert it back to perfect wave form 60 cps AC power using an inverter. This system would cost approximately \$2,000. This solution would solve power quality concerns on one circuit for one customer. Although only Mr. Lake is complaining at this time, all Atlanta Power Customers are experiencing the same fluctuations even though their electrical equipment continues to function. The Staff is aware of one other customer who has experienced problems similar to Mr. Lake, but he has not lodged a complaint.

A more expensive solution that would improve power quality for all customers on the entire system involves replacing the turbine/generator control system. As previously discussed, the current control system does not begin to respond until a high or low frequency set point is exceeded. A more accurate control system would detect when the frequency was beginning to change and adjust the wicket gates more quickly and in smaller increments instead of waiting to respond until the system is substantially above or below 60 cps. The Staff's rough estimate of the cost of replacing the control system is \$15,000 to \$25,000.

As the Commission is aware, Atlanta Power's electric rates are very high relative to other electric rates in Idaho. Atlanta Power customers currently pay an average of 44.3 ¢/kWh. Other Idaho customers pay less than 10 ¢/kWh. The Commission established the rates in Order No.

30704 (Case No. ATL-E-08-02) to provide the Company with the revenue necessary to operate the system. Some customers have disconnected from the system as a direct result of the last rate increase, including Atlanta Power's single largest customer. The Staff is very concerned that further increases in Atlanta Power's electric rates could result in other customers leaving the system. Staff's hope throughout this investigation has been that a no cost or very low cost solution could be found. In Staff's view the cost of replacing the turbine/generator controls does not qualify as low cost.

Staff does not believe that Atlanta Power should invest in a double conversion UPS for Mr. Lake's dishwasher circuit. Such an investment would establish a precedent that may require Atlanta Power to make other such purchases to meet the needs of other customers who may be experiencing power quality problems. It would not take very many \$2,000 investments before the Company's total investment would equal or exceed the cost of solving the power quality concern for all customers.

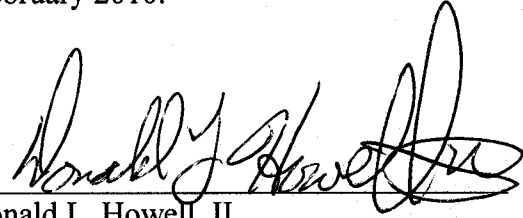
The Staff believes that the power quality problem that Mr. Lake is experiencing is real. The Staff further believes that all other Atlanta Power customers are being exposed to the same fluctuating power quality and that some electrical appliances may experience shortened lives as a result. It is likely that this has been the situation on Atlanta Power's system since its inception in the early 1980's. While this is not a desirable situation, an investment requiring a rate increase is less desirable. In Staff's opinion, the loss of more customers, which may occur with even a small rate increase, could jeopardize the financial viability of the Company and potentially end central system power service in Atlanta.

STAFF RECOMMENDATION

For the reasons stated above, the Staff proposes the following approach to resolve the power quality problem in Atlanta. First, the Commission should take Mr. Ray up on his expressed willingness to continue to pursue very low cost solutions to system and customer specific power quality concerns. Second, in November of 2011 the Company is scheduled to make the final monthly payment of approximately \$1,460 on the next loan to be extinguished. If there have been no significant changes in the Company's financial position at that time, \$1,460 per month could be available to address any remaining power quality issues on the system without increasing rates. It is Staff's proposal that when the next maturing loan is paid off, the financial position of Atlanta Power be evaluated. Following the evaluation the Staff recommends that the Commission

implement a plan to resolve any remaining system power quality concerns without increasing rates above present levels, if possible.

Respectfully submitted this 17th day of February 2010.



Donald L. Howell, II
Deputy Attorney General

Technical Staff: Keith Hessing

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CERTIFICATE OF SERVICE

I HEREBY CERTIFY THAT I HAVE THIS 17TH DAY OF FEBRUARY 2010, SERVED THE FOREGOING **COMMENTS OF THE COMMISSION STAFF**, IN CASE NO. ATL-E-09-01, BY MAILING A COPY THEREOF, POSTAGE PREPAID, TO THE FOLLOWING:

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