ComEd Ex. 1 Motion to Strike

AFFIDAVIT
(May 30, 2012)

THOMAS R. RUMSEY, being first duly sworn on oath, states that:

1. On June 18th 2009, I tested meter #141521021 a D3LS6R size 08 as a complaint test for the customer Amcor (then known as Rexam Medical Packaging). The meter tested at a weighted average of 100.00% and after performing a diagnostic register reading, I found that the meter had been programmed correctly by the manufacturer (Elster) on 12/15/08.

2. I noted the account in CIMS and saved my test report, the field report and the diagnostic register reading electronically. (See Attachment A--4 records)

3. On September 24th 2009 I received a phone call from the Customer Relations Department who asked me why the billing shot up around 300% since meter #141521021 had been installed and questioned whether meter #141521021 was 100% accurate.

4. After giving the matter some thought, I realized there could have been an issue with the meter that preceded meter # 141521021.

5. I researched and found that meter #140284879, a DJLS6R size 08, had been the meter at the account previous to meter #141521021. (Stip. ¶ 13). I had also found that meter #140284879 was assigned to a pallet waiting to be tested for re-deployment to the field.

6. I located meter # 140284879 and performed an accuracy test and diagnostic register reading on it. (Stip. ¶ 36)

7. I found that meter # 140384879 was accurate with a weighted average test result of 99.95%.

8. I also found, however, that meter # 140384879 was incorrectly programmed with a scaling factor of 6 instead of the correct scaling factor of 2. (Stip. ¶ 33, ¶ 36). This issue causes the billing software to bill usage at 33%. (Stip. ¶ 33).

9. I then saved my report and a diagnostic register reading electronically and forwarded them to the Customer Relations Department. (See Attachment B--3 records). These records are kept in the ordinary course of business.

10. I placed meter #140384879 on shelf #TIAD 13 on 9/24/09. I did not hear anything further concerning the meter. (Stip. ¶ 38). On 10/25/10 Meter # 140384879 was

discarded because it had been held for 13 months (Stip. ¶ 37) and shelf space was needed.

Meter Accuracy Test

11. When a solid state meter (a meter with no moving parts such as a disk, gears and dial pointers) is tested for accuracy, the meter sends out test pulses through the meter cover at what is referred to as an optiport. (Stip. ¶ 25).

12. A probe or pulse pick-up device is set up on the optiport to retrieve those pulses and send them into the test equipment/software. (Stip. ¶ 30).

13. The test pulses can best be described as simulating a mechanical meter disk in that it sends a pulse out of the optiport every time the "virtual disk" makes one revolution (Stip. ¶ 23) much like the black mark on the edge of a mechanical disk spins past the center of the meter face as the disk rotates.

14. The test equipment/software is set up to match the meter wiring form, volts, amps and Kh (one revolution of a mechanical or virtual disk expressed in watt hours). As an example: Meter # 140384879 (the meter in question in the Amcor case) had a Kh of 1.2. This means the meter should send a test pulse out of the optiport every time 1.2 watt hours of power has passed through the meter. (Stip. ¶ 34).

15. The test equipment/software monitors how much power has been supplied to the meter and matches that with the test pulses sent through the meter's optiport.

16. The test equipment/software calculates the accuracy of the test pulses as compared to the power supplied. The test equipment and software used to calculate meter accuracy is owned and maintained by the System Meter shop with some occasional support from the test equipment manufacturer and software designer.

Meter Programming

17. Meter # 140384879 was a DJLS6R size 08. This means it was a solid state (Stip. ¶ 23), three phases, 480 Volt, Transformer Rated Recorder meter.

18. After a solid state meter is tested for accuracy, the meter manufacturer's software (in this case, Elster) is used to set the parameters required for each meter size & type such as scaling factor. It also sets kWh (kilowatt hour) readings to zero much like you would with a mechanical meter by physically turning all the dial pointers to zero.

19. Recorder meters such as meter # 140384879 store billing pulses in an internal memory chip (Stip. ¶ 25) as opposed to a meter that just measures kWh usages (i.e. meters found on single family homes and apartments). This storage of billing pulses lead to the need for scaling factors.

Scaling Factors

20. When recording meters were first introduced in the 1980s, they were manufactured with a standard CPR (counts per revolution) of 12.

21. The recorder meters had limited memory space at that time.

22. There was no problem with transformer rated meters due to the current transformer ratio. For example, if a service has 300:5 amp current transformers, this means for every 300 amps that go to the customer, 5 amps goes to the meter. That translates to "for every 60 kWh consumed, 1 kWh is recorded on the meter." This left plenty of memory space inside transformer rated meters.

23. There was a problem with the memory space in self-contained meters. These are meters in which all the current that flows to the customer also flows through the meter (a 1:1 ratio). To illustrate: if 120 kWhs were consumed on a self-contained service, 120 kWhs of internal meter memory is used. Conversely, if 120 kWhs were consumed on a transformer rated service, 2 kWh of internal meter memory is used.

24. This lead to the creation of the scaling factor. A scaling factor of 3 was programmed into self contained meters to result in a CPR of 4 (12/3 = 4). This took up less internal meter memory. The CPR of 12 for transformer rated meters and the CPR of 4 for self-contained meters became the standard. Recording meters began to be manufactured with a CPR of 24. (Stip. ¶ 26).

25. This led to the need for a scaling factor of 2 for transformer rated meters (24/2 = 12) and a scaling factor of 6 for self-contained meters (24/6 = 4) to maintain the standard CPRs (12 for transformer rated meters and 4 for self-contained meters).

Diagnostic Register Readings

26. A diagnostic register reading is done to view the parameters programmed into a solid state meter. The meter manufacturer's software (in this case Elster's Alpha Plus software) is used.

27. Diagnostic register readings **ONLY EXTRACT** program parameters. This information cannot be manipulated by the user.

28. Among the parameters viewable by using the meter manufacturer's software for a diagnostic register reading are:
    - Scaling Factor
    - Program I.D. number
    - Date meter was diagnostically read
    - Date meter was last programmed

29. The diagnostic register reading done on meter # 140384879 shows:

- The meter was diagnostically read on 9/24/09. (Stip. ¶ 36).
- The meter was programmed on 7/19/05.
- The scaling factor was 6 (which should have been 2; see above scaling factor section). (Stip. ¶ 33, ¶ 36).
- The program I.D. number is 65 (it should have been 64).

How Programming Error Was Made

30. When Elster meters were initially purchased, the manufacturer's programming software (Alpha Plus) would not communicate with ComEd's testing software (AMS).

31. As a result, Icons were placed on each tester's computer desktop.

- One Icon programmed a scaling factor of 6 (CPR of 4) into these meters.
- Another Icon programmed a scaling factor of 2 (CPR 12) into these meters.

This made it possible for the tester to inadvertently choose the wrong Icon.

32. An accuracy test will *not* reveal this error due to the single pulse sent to the optiport for either CPR.

33. After getting the manufacturer to write a link file, the manufacturer's software and ComEd's testing software now communicate. This linked the manufacturer's program to the test equipment/software's Command Line Interface.

34. Command Line Interface automates the programming process by assigning programs to meter types in AMS (testing software) which eliminates the possibility an incorrect program can be chosen. Each test board is periodically audited to be certain the correct programs are assigned to the correct meter types.

35. I am willing to explain all these particulars in live or pre-filed testimony at a hearing and to submit to cross-examination.

Thomas R. Rumsey

Subscribed and Sworn to before me
this 30th day of May, 2012.

"OFFICIAL SEAL"
NORMA FAJARDO
Notary Public, State of Illinois
My Commission Expires 11/21/14

Notary Public