

**From:** Andrew McAfee <andrewmcafee1@mac.com>  
**Sent:** Thursday, October 26, 2017 10:52 AM  
**To:** Finley, Ed; Statements  
**Subject:** Re: Docket E-100 Sub 147, E-7 Sub 1115 and E-7 Sub 1146  
**Attachments:** Andrew's Oct. 26 17 response to NCUC re DEC .pdf

**FILED**

**OCT 26 2017**

**Clerk's Office  
N.C. Utilities Commission**

**RE: Docket E-100 Sub 147, E-7 Sub 1115 and E-7 Sub 1146**

**RE: Duke Energy Carolinas, LLC's Response to August 21, 2017 Order Requiring Smart Meter Plan Presentation**  
**Docket No. E-100, Sub 147**  
<http://starw1.ncuc.net/NCUC/ViewFile.aspx?Id=cf0ff168-3ecf-4a78-b328-89ac2fe2933a>

Dear Chairman Finley and NCUC Public Staff,  
Oct. 26, 2017

Please further address these vitally important topics with DEC:

1. Key Code security vulnerabilities,
2. selling personal data in future,
3. future replacement costs and
4. over billing segments.

Pg. 2

**DEC: "All data is encrypted at the meter and decrypted at headend system. The unique meter number is then used as the linkage to other information within the customer billing systems."**

Q: Is there one "Key Code" to unscramble all the data? This is a major security flaw found in other countries and systems.

Schneier.com Security Blog:

"The agency built in additional security measures for the UK metering system after discovering glaring loopholes in meter designs in use abroad that it believed could pose a national security risk if rolled out in Britain.

The communication channel between each meter and the utilities operating them was designed to be encrypted. But the encryption key — the code used to unscramble the data each meter sends and receives — was the same for all of them."

[https://www.schneier.com/blog/archives/2017/10/reaper\\_botnet.html#c6763085](https://www.schneier.com/blog/archives/2017/10/reaper_botnet.html#c6763085)

Pg. 2:

**NCUC: Rule R8-60.1(c)(3)(v)**

*(v) A description of how third parties will implement or utilize any portion of the technology, including transfers of customer-specific information from the utility to third parties, and how customers will authorize that information for release by the utility to third parties.*

**DEC: This section is not applicable as this project does not currently involve the transfer of customer information to any third parties.**

Q: What guarantees do we have that DEC will not allow access or sell our personal data IN THE FUTURE? Hackers have cracked into the Pentagon. What are the consequences of leaking our information? How would we know? There are laws against placing a surveillance device upon a home without the home owner's knowledge and consent as this violates the 4th amendment.

NC General Statutes - Chapter 15A Article 16

§ 15A-287. Interception and disclosure of wire, oral, or electronic communications prohibited.

[http://www.ncga.state.nc.us/EnactedLegislation/Statutes/PDF/ByArticle/Chapter\\_15A/Article\\_16.pdf](http://www.ncga.state.nc.us/EnactedLegislation/Statutes/PDF/ByArticle/Chapter_15A/Article_16.pdf)

Pg. 7

**DEC: "...after a meter reaches 15 years of life, no further benefits are associated with that meter within the analysis."**

Q: Shouldn't these meters be lasting @ 30 years (even the batteries die after 5) and won't the cost to change them be 20-50Xs the value of the meter?

Clive Robinson on the [schneier.com](http://schneier.com) Security Blog reported:

"A very large amount of time and money is being put into doing smart metering correctly... And at the end of the day it will be insufficient and the meters will be cracked long before their planned product life is at an end.

I can say this because an energy/water meter should be good for thirty five years. But we have not had any crypto algorithm last anywhere near that long...

I've discussed in the past what needs to be done to sort this problem but I suspect the chances are about as close to zero as makes no odds that they will not do what is needed...

The labour cost of replacing a meter is going to be in the order of 20-50 times the actual meter value, and the cost of labour and meter with 100-200% profit will be extracted out of customers one way or another.

Then of course there will be the "consumer data" to be sold. The smart meters should be able to send three readings a second back to those who "bill" and they will find a way to extract information from the meter readings that can be sold etc..."

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Pg. 9

NCUC: 11. How many times each day and for what length of time for each occurrence is DEC gathering data from each AMI meter? Will this change over time? Explain fully

**DEC Response:**

**For billing purposes, all AMI meters are interrogated once a day pulling back 30-minute interval usage information.**

Q: If a hair dryer is used for 47 seconds, how much time is logged on the meter or reported as billed energy usage? 1 minute? 5 minutes? 15 minutes?

What is the real time usage vs. recorded time billed?

I have read that everything is put into segments like 15 seconds, or even 15 minutes.

This could account for the reports on massive over-billing just in itself. Add to this the dirty electricity from solar inverters and switching mode power supplies that are mistakenly interpreted as an appliance being on or increasing power usage.

Again, my position is the only way to ensure that customers are secure and healthy is to provide an ANALOG (electro-mechanical) meter.

Thank you for your continued persistence in representing the public's interest.

Gratefully,

Andrew McAfee

Raleigh, NC

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