**Before the**

**FEDERAL COMMUNICATIONS COMMISSION**

**Washington, D.C.**

In the Matter of the

Wireline Competition Bureau

Network Change Notification filed by Verizon Maryland, LLC. Under Rule 51.332 in connection with the Retirement of Copper Network Facilities in Maryland

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) WC Docket No. 16-351

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COMMENTS OF MICHAEL J. MARCUS, CABIN JOHN, MD

**SUMMARY**

These *pro se* comments do not oppose the replacement of copper. We find that this replacement is inevitable and in the interest of consumers. However we wish to point out to the Commission that Verizon's plans appear to include a backup power strategy that is poorly described and basically dangerous to the public safety. We urge the Commission to require Verizon to be more explicit about its back up power strategy and its safety implications and also to make a finding whether it is actually in the public interest as presently being implemented.

**INTRODUCTION**

These comments are being filed by Michael J. Marcus, Sc.D., F-IEEE, a retired FCC senior executive who worked at the Commission nearly 25 years in both the spectrum policy and enforcement areas. His qualifications are well know to the Commission[[1]](#footnote-1). He was awarded the 2013 IEEE Communications Society Award for Award for Public Service in the Field of Telecommunications.[[2]](#footnote-2) He regularly publishes a blog, *SpectrumTalk*[[3]](#footnote-3), that is probably the most comprehensive independent blog on spectrum policy and spectrum reform as well as writing a regular column on spectrum policy issues for *IEEE Wireless Communications Magazine*, published by the IEEE Communications Society, “the premier international forum for the exchange of ideas on communications technologies and information networking”[[4]](#footnote-4). As an adjunct professor of electrical and computer engineering at Virginia Tech, he teaches a course on spectrum policy for innovative wireless engineers. In 2012-2013 he was chair of IEEE-USA Committee on Communications Policy. These comments represent only the views of Dr. Marcus and not necessarily the views of any of his clients.

**BACKUP POWER AT MARCUS RESIDENCE**

In 2004 FiOS fiber optics service was installed at the Marcus residence in Cabin John, MD. The original installation included a sealed lead acid battery inside the house for backup power. This backup power had three key characteristics:

1) It was rechargeable and recharged after an outage

2) It was essentially an uninterruptive power supply so immediately powered the electronics needed for connectivity in case of the power outage without any need for manual intervention.

3) It had several monitoring lights on the inside unit that monitored whether the battery was charging and whether it had to be replaced. The lead acid battery had a lifetime of about 3 years and replacement was the consumer's responsibility.

The above described backup power system was replaced by Verizon in June 2017 following a hardware failure probably connected with a thunderstorm. We assume the new system is the same one proposed in this proceeding for Maryland residents. In the Verizon filing of April 14, 2017 it states



This statement appears to be FALSE!

The backup power system installed at my house was a CyberShield DBH36D12V UNIT. The instructions furnished by Verizon are attached to this filing. I was explicitly told by the installer to turnoff the switch on the unit because leaving it on while there was power would drain the dry cells. In the attached Twitter dialogue with Verizon this issue is also discussed. While the dialogue suggests leaving the switch on, it acknowledges that this will drain the battery and offers no estimate of what the battery life time is when the battery is left on. Thus this unit lacks the automatic switchover the previous unit had unit one is willing to accept shorter battery life.

Now shorter batter life might be acceptable if it was practical to identify when batter replacement was needed. The manual discusses a "battery tester" that is included. The installer referred to this as "litmus paper". In order to check battery condition, one must remove all 12 D cells and one by one hold this plastic strip to both ends. This is an amusing science fair project but does Verizon really think many consumers will do this so that dead batteries are identified in a timely way? The inevitable consequence of this awkward technology will be consumers trying to use their phone for emergency uses such as E911 calls and discovering their backup power is dead!

Now recall the statement above from Verizon:

"any devices that rely on your voice service, such as fax machines, medical devices, or security alarms connected to central station, will continue to work the same way they currently do over copper"

In the case of an alarm system, the central station will be unable to receive the alarm signal unless there is a working backup power supply. If the homeowner is away, this requires switching on the backup system before going away and then accepting the decreased battery lifetime - of unknown amount and without any clear status indicator.

**CONCLUSION**

While we support the switchover to noncopper media including both optical fiber and radio technology, sloppy attention to backup power is plainly dangerous. In practice, emergency calls during blackouts will be unreliable and home alarm systems with central station coverage will be problematical.

We urge the Commission to find the present D cell technology that Verizon is using not to be in the public interest and to require that backup power have both automatic switch over in case of power outage as well as simple clearly identifiable methods for monitoring battery status for identifying when batteries need to be replaced.

The original FiOS system of a decade ago had both characteristics. Such a system could be implemented with either dry cells or rechargeable batteries and we take no position on which should be used.

/S/

Michael J. Marcus, Sc.D., F-IEEE

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Twitter message exchange with @VerizonSupport







1. FCC Press Release “FCC Engineer Michael J. Marcus Honored by Institute of Electrical and Electronics Engineers (IEEE)” February 3, 2004,

   (http://hraunfoss.fcc.gov/edocs\_public/attachmatch/DOC-243463A1.pdf) [↑](#footnote-ref-1)
2. http://www.comsoc.org/about/memberprograms/comsoc-awards/telecom/bios [↑](#footnote-ref-2)
3. http://www.marcus-spectrum.com/Blog/Blog.html [↑](#footnote-ref-3)
4. http://www.comsoc.org/about/overview [↑](#footnote-ref-4)