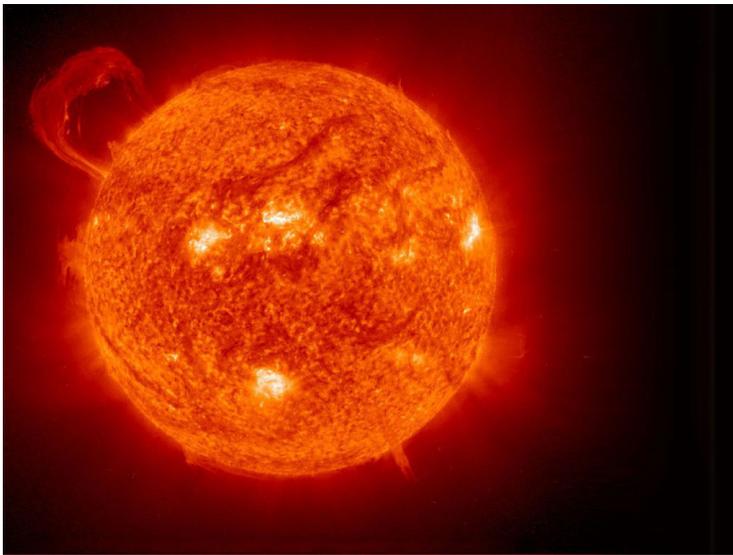


## MORE THAN JUST ANOTHER DATA CENTER *by Linda J. Morrow*

There is no denying that our dependence on electronics as a society becomes greater with each passing day and drives the need for data storage, and therefore, data centers, upward. Also on the rise are the number of ways that data can be compromised. Cybercrime has become the fastest growing cause of data center outages and customers of retail giants Target and Home Depot along with the US government's Office of Personnel Management and the Department of Defense know all too well the pain of identity theft.



One threat to data security that may not be common knowledge to the masses is that of ElectroMagnetic Pulse, or EMP. Simply put, an EMP is a sudden blast of high energy electromagnetic radiation that can originate from two basic sources: solar storms or man-made weaponry. A crippling solar flare and resulting storm can be expected to occur once every 100 years, and the last one took place in 1859. Man-made weaponry fall into two camps: IEMI (Intentional ElectroMagnetic Interference) weapons, and HEMP (High altitude ElectroMagnetic Pulse) weaponry. The IEMI variety is available now and can range in size from fitting in the palm of your hand to the size of a trailer. Far more dangerous is the latter category. As its name indicates, a HEMP weapon is intended to detonate high in the atmosphere, radiating damaging and far reaching energy waves vast distances underneath. An EMP is capable of shorting out electrical circuits and electronics within its line of sight, so the higher up the explosion, the greater the destruction below. Obviously, EMPs could have a devastating impact on critical infrastructures making up our domestic power grid. High voltage transformers would be destroyed, and recovering from such a calamity would take months if not years. Because of the sheer destruction EMPs can cause, the US government

was concerned enough to establish an EMP Commission a number of years ago. Many utilities are under the impression that this is a national security concern. However, Congress has yet to pass legislation regarding protecting against EMPs, and ownership of this issue remains unclear.

Lifeline Data Centers is a company on the forefront of technology and is currently building an EMP-ready data center in Ft. Wayne, Indiana. To be truly protected against the ravages of EMP exposure, a data center must undergo extensive building and testing requirements as well as certification procedures. A physical shield is required in side walls, floors, and ceilings... "it's similar to building a box around your data center," explained Alex Carroll, co-owner of Lifeline Data Centers. Power and signal line filters and RF-tight doors are supplemental ways to add protection against EMPs.

Uptime is the number one priority for a data center, and electro-magnetic pulse is a very real threat to uptime and needs to be taken seriously. Michael Caruso, director of government and specialty business development at ETS-Lindgren stated, "The common response is, 'It can't happen'." He continued, "It can and will happen." Lifeline Data Centers is a leader in data center compliance, uptime, and innovation, and is forging ahead with its Ft. Wayne facility and expects it to be online the first half of 2017. It will be their third location in the state of Indiana and will serve as their flagship data center. As such, they are being very selective in the equipment being incorporated into the facility. Uninterruptible power supplies (UPS) are one of the core components of mission critical infrastructure in a data center; UPS failure is the number one cause of unplanned data center outages, accounting for twenty-five percent of all such events. Clearly, reliability is of key importance in selecting a UPS vendor.



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Lifeline had been using a competitor's UPSs and began noticing that it was not unusual for one of their UPSs to crash about every third time a storm passed through. The true value of a data center lies in its uptime and when it suffers an outage, the downtime is excruciatingly painful for both clients and the data center staff alike. Depending on the business they are in, clients can incur a number of tangible costs, such as lost transactions, a drop in productivity, & ruined inventory. In addition, they can experience indirect costs such as a drop in employee morale, customer good will, lost business opportunities, and even damage to their brand. On the data center side, an outage raises stress levels and typically requires extended working hours of all involved trying to resolve the problem and keeping clients informed of their progress.

Lifeline reached the breaking point with their supplier when one of their UPSs literally blew up when it went into bypass mode. Not surprising, Lifeline was anxious to make a change in their UPS supplier -one that, in Carroll's words, "could stand up to a punch". They wanted a partner, not just a supplier, who could furnish a highly reliable product consistently and on time.



The day after the catastrophic UPS failure, Carroll visited Mitsubishi's home offices in Pittsburgh and the following day had a Mitsubishi replacement UPS up and running in his facility back in Indiana. Lifeline made the switch to Mitsubishi as their choice of supplier in 2008 and has not seen an outage since. In Carroll's own words, "In large part, because of a Mitsubishi partnership, Lifeline has not lost a customer except to bankruptcy or mergers over a 15+ year history."

It is interesting to note that Carroll first heard of the reputation of the Mitsubishi UPS brand from a service provider. The broad view of the Mitsubishi units in the industry is that they are extremely reliable, and that as long as they are properly maintained, they will deliver continuous trouble-free operation. To date, Lifeline has a total of 14 Mitsubishi UPSs online and will be adding more for the new Ft. Wayne facility. "For me, Mitsubishi is the only option out there capable of providing the high level of protection that will match the rest of the structure," stated Carroll.

The Ft. Wayne facility will be one of the first EMP-ready commercial colocation data centers in the US.