

UPS BATTERY MODERNIZATION IN AN ACTIVE COLOCATION DATA CENTER

Digital Crossroad | Hammond, Illinois



CHALLENGE

With customer SLAs on the line, even momentary downtime could have serious financial and reputational consequences.

Retrofitting VRLA UPS batteries to lithium-ion in an in-service system meant managing unavoidable risk in an environment where uptime is non-negotiable.



SOLUTION

DX partnered with Kramer Datapower and Mitsubishi Electric, leveraging their deep site and equipment expertise to execute a meticulously planned, highly coordinated retrofit plan.

With months of cross-functional preparation and scripted execution, the team completed each system upgrade quickly, safely, and without disruption.



RESULTS

With no impact to uptime, DX fully transitioned to lithium-ion, reducing maintenance, reclaiming space, and freeing site teams to focus on high-value operations.

The upgrade delivered measurable ROI while reinforcing confidence in trusted partners.

OVERVIEW. Committed to delivering sustainable, secure, and scalable IT infrastructure, Digital Crossroad (DX) is a wholesale colocation data center connecting businesses, universities, and local communities across the Midwest.

Their 20MW Tier III facility in Hammond, Indiana (DX-1) hosts clients ranging from single racks to multi-megawatt data halls. To uphold stringent service-level agreements across a diverse tenant base, DX demands reliable, high-performing mission critical equipment designed for long-term operational efficiency.

"Downtime is not an option in this business," says Steve Owens, Critical Facilities Manager at DX. "We are committed to a 100% uptime goal for power and cooling to our customers. Our equipment must be reliable to ensure there are no risks to our customers' equipment."

DX-1 employs multiple [Mitsubishi Electric 1500kW UPS systems](#): two lineups configured with lithium-ion batteries and one supported by Valve Regulated Lead Acid (VRLA) batteries. As these VRLA batteries approached their five-year end-of-life window, DX partnered with Mitsubishi Electric and Kramer Datapower, Inc. to evaluate, plan, and execute a VRLA-to-lithium-ion retrofit.

CHALLENGE. In a live colocation environment, any work performed on an in-service power infrastructure carries inherent risk. Even a temporary reduction in system redundancy or protection can expose customer workloads, compromise availability targets, and put service-level commitments at risk.

Although DX previously deployed lithium-ion technology elsewhere on site, retrofitting an existing UPS lineup introduced unavoidable vulnerabilities: "There is risk involved when the UPS is unavailable. The goal was minimizing maintenance time and downtime during that transition," said Owens.

Beyond the physical battery changeout, the project required navigating a set of variables that can make or break safe and successful execution:

- Understanding and addressing all electrical, fire suppression, and safety considerations when transitioning from VRLA to lithium-ion technology.
- Aligning numerous stakeholders, including OEM and third-party technicians, contractors, site staff, and recycling services.
- Strategically shifting critical loads to other UPS units and allowing adequate time for charging and commissioning the systems.

Together, these factors elevated the event to a mission-critical operation; one that demanded early planning, deep technical expertise, and precise cross-functional coordination.

SOLUTION. To mitigate risk and ensure uptime, DX relied on its long-standing partnership with Kramer Datapower and Mitsubishi Electric, leveraging site familiarity and OEM technical expertise.

Initial conversations began nearly a year in advance, with a detailed plan finalized six months before installation. During this period, DX, Kramer Datapower, Mitsubishi Electric and supporting contractors held multiple pre-project meetings to align on scope, scheduling, and safety requirements.

Kramer Datapower led early planning and cross-coordination, while Mitsubishi Electric provided equipment and code compliance expertise, inventory verification, battery charging, and commissioning. A third-party handled the VRLA removal and lithium-ion installation.

"We had everything very well scripted with the different teams... it was a huge coordination piece," said Owens. "We unloaded the UPS, switched to bypass, unloaded the batteries and demoed those out, and installed, started up, and commissioned 24 lithium-ion batteries all in one week. It was a..."

...very quick turnaround for each system. Kramer and Mitsubishi Electric knowing the site and the equipment helped out greatly.”

The retrofit proceeded as planned, with each system returning to service without any major issues or delays. “I think it was one of the smoothest projects that I’ve ran in my time,” Owens adds.

RESULTS. With the retrofit complete, DX has now standardized on [lithium-ion batteries](#) across the DX-1 facility. Switching to lithium-ion presented three main benefits: greater ROI, increased floor space, and better allocation of site staff hours.

“In my experience, VRLA batteries will start showing failures around the three-year mark. With lithium-ion, I’ve never had to change a cell, and I’ve been using them for about six years at this site and others. It’s basically plug-and-play,” says Owens.

By eliminating frequent impedance testing and VRLA cell replacements, DX significantly reduced routine maintenance demands on site staff and vendor technicians. Battery performance is now monitored through the integrated battery management system (BMS), allowing personnel to focus time and resources on other critical operations.

The smaller footprint of lithium-ion (up to 60% smaller than traditional VRLA) also freed up floor space within DX-1’s electrical room. “We didn’t really think about the footprint until installation; then we realized how much space we gained,” said Owens. “That was definitely a value add: ease of movement around the room.”

The success of this project further reinforced DX’s confidence in both Kramer Datapower and Mitsubishi Electric: “I’ve had different vendors in the past, and with Kramer, it’s very easy to schedule with them and set up contracts,” says Owens. “Anytime we need something, they’re on site within 24 hours or less. On the equipment side, Mitsubishi Electric is my top pick. Their units run really well in comparison to others I’ve had in the past.”

DX’s ongoing partnership with Mitsubishi Electric means he often sees the same technicians on his site: “I can have full ease of mind. With other vendors, I trust but verify. With Mitsubishi Electric’s technicians, I’ve never had that issue.”

Supported by Kramer Datapower’s ongoing consultation and Mitsubishi Electric’s OEM expertise and factory-trained technicians, Digital Crossroad is well positioned with the equipment and partnerships to scale with confidence and achieve long-term success.

ABOUT DIGITAL CROSSROAD

Digital Crossroad (DX) is a wholesale colocation company comprised of proven industry veterans committed to delivering sustainable data center solutions that reduce environmental and economic cost. [Learn more about Digital Crossroad.](#)



ABOUT MITSUBISHI ELECTRIC

Since 1964, Mitsubishi Electric has manufactured precision engineered, high-quality [uninterruptible power supplies](#) to protect mission critical operations from catastrophic downtime.

Mitsubishi Electric leads the industry in designing and manufacturing UPS systems reaching 99.9995% equipment reliability. Available in single and multi-module configurations, our UPS systems feature a broad range of kVA capacities and compatible battery and peripheral equipment.

ABOUT KRAMER DATAPOWER, INC.

Known for their high level of integrity and excellent customer service, Kramer Datapower, Inc. represents and distributes power quality products that protect critical operations across the Mid-West. [Learn more about Kramer Datapower, Inc.](#)



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