



Announcing the First Fault-Managed Power Online Clinic

“The development of fault-managed power represents another giant leap in power distribution across multiple environments.”

— Denise Lee, Vice President of Engineering, Cisco

Interest in fault-managed power (FMP) is exploding, and engineering companies, contractors, and integrators are imagining all the possible ways they could use it. The problem is that the electrical-distribution market is enormous, so many are asking the same questions: Where does FMP make sense? Where doesn't it? And how do I tell the difference?

That's exactly what the **Fault-Managed Power Online Clinic** is designed to address. Designed and led by experts from the **FMP Alliance**, the clinic is practical, efficient, and customized.

HOW IT WORKS

When you register, you'll complete a short survey identifying the applications you care about—CCTV, heat pumps, data-center racks, access control, lighting, and so on. FMP trainers will review your submissions and classify them into strong fits and poor fits, based on how FMP compares to conventional electrical methods in terms of installation complexity, cost, and performance.

During the clinic, instructors will walk through examples from both categories to:

1. Define the end-user challenges
2. Show how an FMP system would be designed and installed
3. Explain why FMP is or is not the superior solution

Participants will leave with a **repeatable evaluation framework**: how to screen opportunities, qualify the good ones, and—when it's the right choice—develop a solid FMP design.

Another major advantage: you'll connect with peers across the growing FMP ecosystem.



EVENT DETAILS

Date: March 12, 2026

Time: 11:30 AM – 1:00 PM ET

Interested in participating? Register and complete the short survey to tell us which applications matter the most to you: <https://fmp-clinic.vercel.app>

Q4 2025 UPDATE

NEMA Limited Energy Systems Section

The NEMA Limited Energy Systems Section, NEMA-LES for short, met on Dec. 3, 2025, at NEMA headquarters in Arlington, VA. Several LES members joined the meeting virtually. NEMA-LES met and delved into agenda issues.

- **OSHA 50V Requirement** OSHA regulation 29 CFR 1910.303(g)(2)(i) mandates that live parts operating at 50V or more must be guarded against accidental contact using approved enclosures or barriers. This regulation applies equally to DC systems, even if they are low current or limited energy. Therefore, the OSHA 50V requirement impacts both FMP (fault-managed power) and PoE (Power over Ethernet) applications.
- The group created content for the Limited Energy white paper, discussed and framed the codes & standards roadmap, and planned future meetings.

We asked Megan Hayes, NEMA Vice President of Standards and Technical Affairs, to comment on the importance of this new group.



Article submitted by: Bob Voss, Distinguished Engineer, Panduit

“NEMA’s Limited Energy Systems Section is driving a transformative shift in how we power smart buildings, data centers, and AI infrastructure. Through strategic engagement with regulators, code input, and the development of resources like the Limited Energy Systems Guide and Codes & Standards Roadmap, we’re aligning safety, innovation, and deployment to unlock the full potential of Class 2, 3, and 4 systems—including fault-managed power. This work is essential to modernizing our regulatory frameworks and accelerating adoption across the built environment.”

For additional information about the NEMA Limited Energy Section, please contact Megan Hayes, Vice President, Standards and Technical Affairs at megan.hayes@nema.org. To learn more about NEMA membership, visit <https://www.makeitelectric.org/membership/membership-types>.

Please follow the progress of this group via the FMP Alliance or if you'd like, use Megan's contact information to get involved with the NEMA Limited Energy Systems Section.

CASE STUDY

A 50-Year Network: West Virginia School Builds Back Smarter with Future-Proof IT Infrastructure

Introduction

Nicholas County Schools in West Virginia set out to achieve what many would consider impossible: build an IT network designed to last 50 years. A network that supports students' growing digital needs while dramatically reducing construction, energy, and operational costs.

This opportunity emerged during the development of the new Richwood Academic Complex, where a forward-thinking technology director reimagined traditional network design with a future-proof architecture.



PROJECT OVERVIEW

Historic flooding destroyed Richwood High School and Richwood Middle School, leaving the district to rebuild. Instead of starting entirely from scratch, the district expanded an existing 40,000-square-foot elementary school into a 110,000-square-foot K-12 facility.

This rebuild offered a rare chance to design an IT infrastructure capable of supporting the district for decades from the ground up.

The Facility - Richwood Academic Complex

- 110,000 square feet (K–12)
- Classrooms, labs, gymnasiums, administrative offices, and specialized learning spaces
- 39 Edge IDF's distributed throughout the building
- Infrastructure designed for long-term scalability, safety, and sustainability

The Challenge

Typical network designs rely on numerous intermediate distribution frame (IDF) closets, AC power, cooling, and extensive copper cabling—elements that quickly become outdated and expensive to maintain.

Key challenges included:

- Avoiding constant equipment upgrades to meet rising bandwidth and power demands
- Eliminating power reliability issues and harmful AC-to-DC conversion losses
- Reducing construction and operational costs
- Minimizing disruption for future moves, adds, and changes
- Ensuring the network could last 50 years

The Solution

Technology Director Chris Hanshaw discovered Sinclair® Digital's AGILE-CORE® Distributed Edge Architecture, a modular system that combines fiber connectivity with safe, intelligent low-voltage power distribution.

The architecture replaces traditional, copper-heavy, IDF-dependent networks with a streamlined hub-and-spoke model that delivers:

- Distributed fiber and DC power
- Long-distance safe fault-managed power (FMP)
- Scalable bandwidth and power capacity
- Reduced heat, noise, and electrical interference
- Lower construction costs and long-term operating expenses

“Sinclair® Digital's AGILE-CORE® gave us a way to deliver the technology students need—while boosting power, saving space, and cutting costs.”

—Chris Hanshaw, Nicholas County Board of Education Technology Director and Facilities Manager

IMPLEMENTATION DETAILS

Hanshaw and Sinclair® Digital began by installing a demo classroom using a single Edge IDF. The classroom was fully connected within four hours—demonstrating the ease and speed of deployment.

After validation, the design was expanded to all learning and administrative spaces, resulting in:

- 39 Edge IDFs installed throughout the complex
- Fanless, ruggedized switches with a 20-year average lifespan
- Distribution of clean, safe DC power with minimal losses
- Use of StrandWise hybrid cable (power + fiber in one plenum-rated sheath)

Each Edge IDF supports two classrooms and delivers Gigabit connectivity and PoE to:

- Wi-Fi 5 access points
- 86-inch interactive displays
- Digital PA systems
- VoIP phones and emergency buttons
- Printers, clocks, and other educational technologies

Distance Considerations

Fault-managed power enables data and power transmission up to 2000 feet from the headend to each Edge IDF, which is far beyond copper's 100-meter limit.

Each StrandWise hybrid cable bundle includes:

- Six strands of single-mode fiber
- Six 18AWG copper conductors

This allows:

- Up to 300 GB bandwidth potential per Edge IDF
- Up to 1800 W total power capacity
- Significant dark fiber and dormant copper reserves for future technology
- Compatibility with renewable energy sources, including solar

Results and Future Expansion

Major outcomes include:

- Over \$1 million in construction savings versus a conventional network
- 30% energy savings by eliminating IDF cooling and AC-to-DC inefficiencies
- Reclaimed square footage for three offices and two multi-purpose closets
- Simplified long-term maintenance and rapid device deployment
- A network expected to remain viable for 50 years
- Eligibility for E-Rate funding

Hanshaw estimates that his maintenance workload and costs will remain dramatically lower because moves, adds, and changes no longer require electricians or new switch closets, only patch cables.

With spare bandwidth, unused switch ports, flexible PoE capacity, and renewable-energy readiness, the network is built to evolve alongside emerging technologies, including robotics, AI-powered tools, and immersive learning systems.

CONCLUSION

Nearly ten years after the floods, Richwood students now learn in a modern, future-ready campus powered by AGILE-CORE® Distributed Edge Architecture. The design cut construction and operating costs while delivering a durable, high-performance network built for generations.

Hanshaw calls it the district's "insurance plan"—a self-sustaining network that supports modern learning and keeps students ready for a rapidly evolving digital world.

CASE STUDY

Coca-Cola's New Hub Goes Multigig —Built For Automation And Growth



Coca-Cola built a new 170,000-square-foot distribution center in Raleigh, NC, its first in decades. The facility was designed as a strategic hub for modern network infrastructure, capable of supporting current needs like IP security cameras and wireless access points, while also being scalable for future automation technologies such as robotic lifts and loaders.

CommScope and Pavion worked together to implement its Constellation® platform, making it future-ready, cost-efficient, and easier to manage.

Benefits the customer realized after installing our solutions:

- Saved approximately \$45,000 in capital expenditures during construction
- Eliminated three IDFs and associated power systems
- Extended reach—up to 500 meters (1,640 feet) of power and bandwidth over hybrid cabling
- Built-in scalability with 40% head-end capacity available for growth
- Supports high-power edge devices, including APs, cameras and building systems
- Modular design simplifies future expansion

EVENTS

- **BICSI Winter**
- **DCD Connect**
- **PEG/ATIS**

RECOGNITION

MEMBER	LEVEL	START DATE
Tempo Communications	Adopter	10/21/2025
Sinclair Digital	Observer	6/30/2025
NECA	Observer	7/10/2025
Clearfield, Inc.	Observer	7/25/2025
CommScope, Inc.	Principal	8/21/2025
I-AVPRO LLC	Observer	9/2/2025