



**CONNECT AND PROTECT**

# Safer By Design

Protect equipment and employees with electrical enclosures and accessories designed with safety in mind.

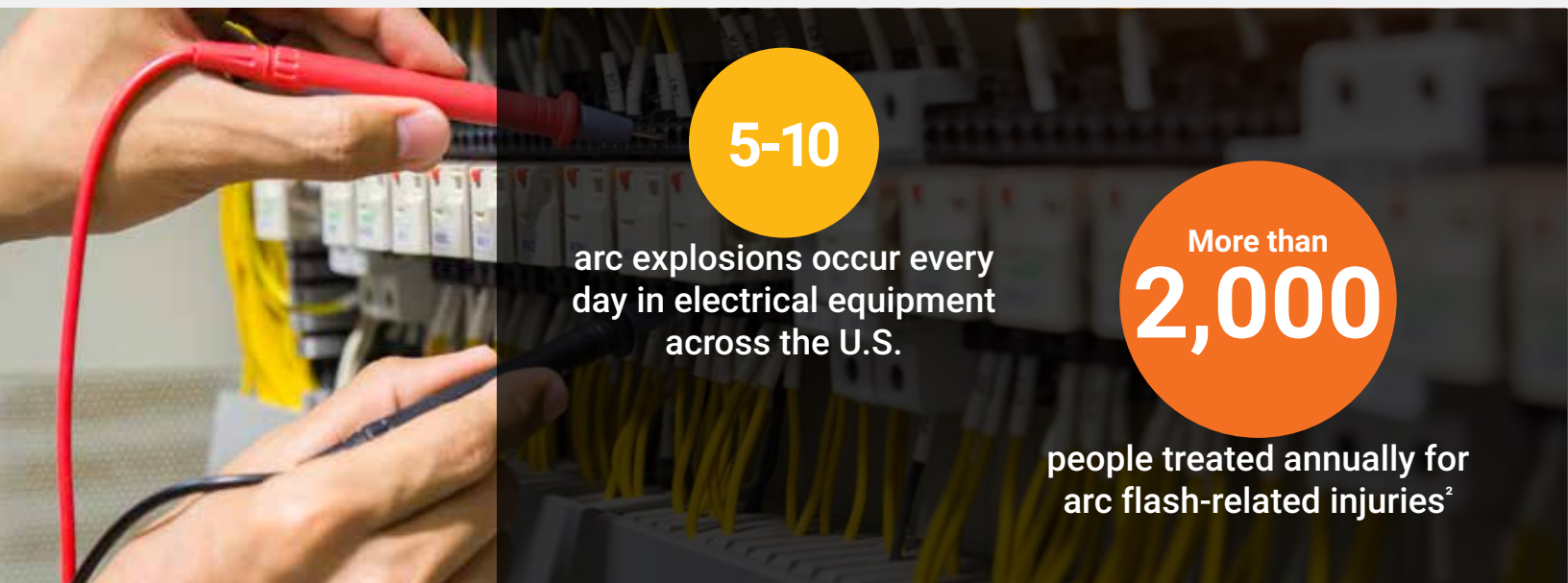
  
nVent

**HOFFMAN**

# Electrical safety remains a persistent challenge for workers and industry

The pace of change for business today can be dizzying. More automation and complexity. Shorter deadlines. Faster production and construction schedules. Higher customer expectations. Not to mention increased regulations and constantly evolving safety standards. It all makes protecting workers' safety and safeguarding expensive and complex equipment an ongoing priority.

The stakes are high. The control of hazardous energy in the workplace remains a persistent challenge. According to the U.S. Occupational Safety and Health Administration (OSHA) electrical-hazard control was the fifth-most common OSHA standard violation in 2018<sup>1</sup>, and potentially deadly arc flash remains a near-constant threat to workers in factory and industrial operations everywhere.



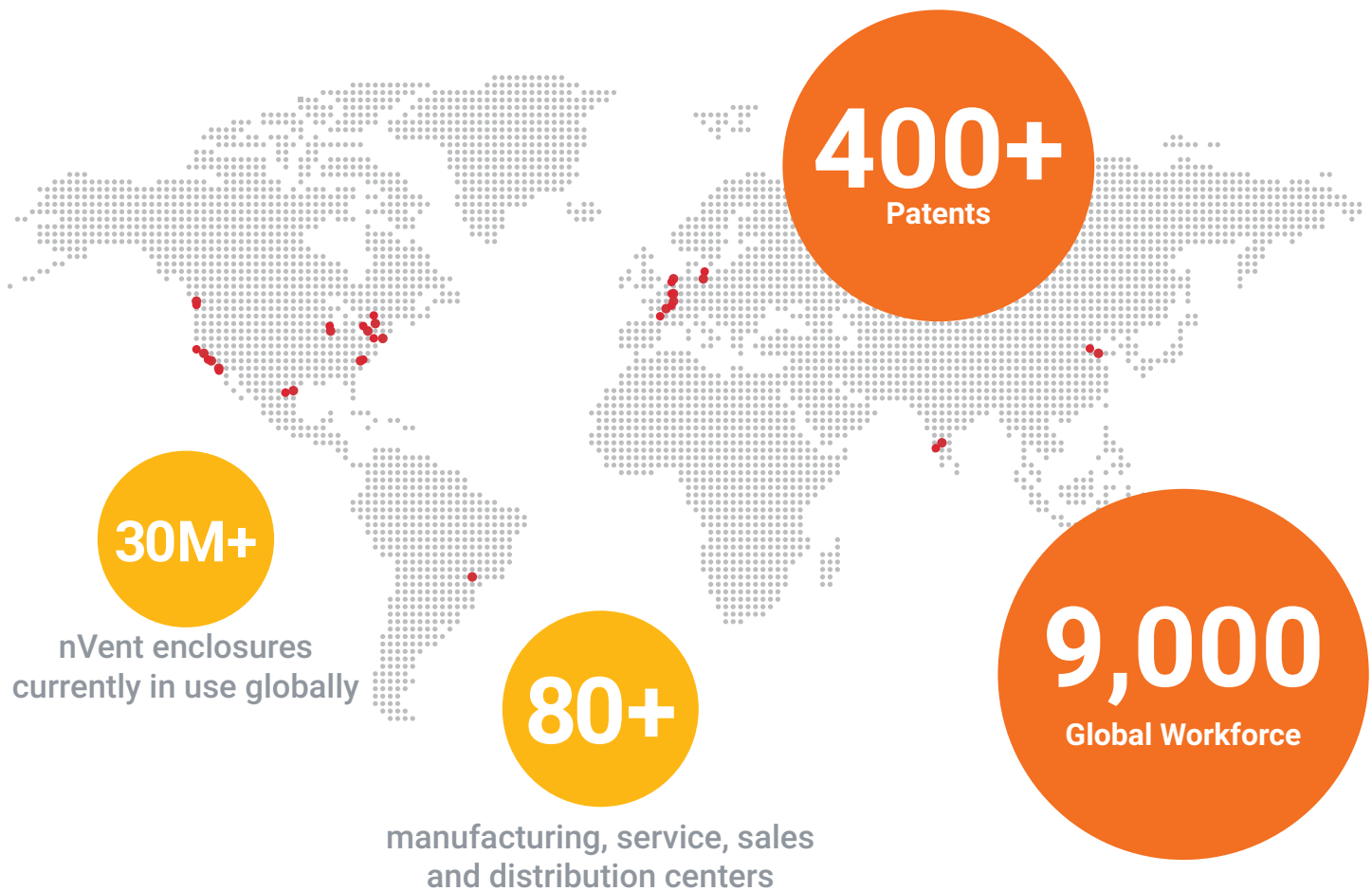
A safe work environment offers peace of mind for employees and management and helps ensure operations run productively and smoothly.

You need a partner to help you design safety into your electrical systems to reduce risk for workers and safeguard your systems. That partner is nVent HOFFMAN.

## nVent HOFFMAN: Safety rooted in innovation

We pioneered enclosure-based electrical safety protection more than 70 years ago with a junction box to house wiring and better protect workers. In 2007 we further advanced protection and prevention with the introduction of Sequestr, the industry's first enclosure-based safety solution to isolate the electrical disconnect from the main enclosure while maintaining mechanical interlock – eliminating the risk of line side contact in the main enclosure given proper design.

We are a leading innovator and provider of electrical safety solutions that protect customers' mission-critical operations around the world.



We believe that safer systems help ensure a more secure world, and the best way to build a safer system is to do it by design.

We follow the NFPA 70E Hierarchy of Risk Control Methods to develop solutions that offer increasing levels of protection to protect workers from the electrical hazard or eliminate the hazard altogether. With nVent HOFFMAN, you select the level of safety that makes sense for your application.

<sup>1</sup> U.S. Occupational Safety and Health Administration; Commonly Used Statistics "The 10 most frequently cited OSHA standards violated in FY 2018"

<sup>2</sup> National Fire Protection Association NFPA 70E-2018 Edition, Creative Safety Supply

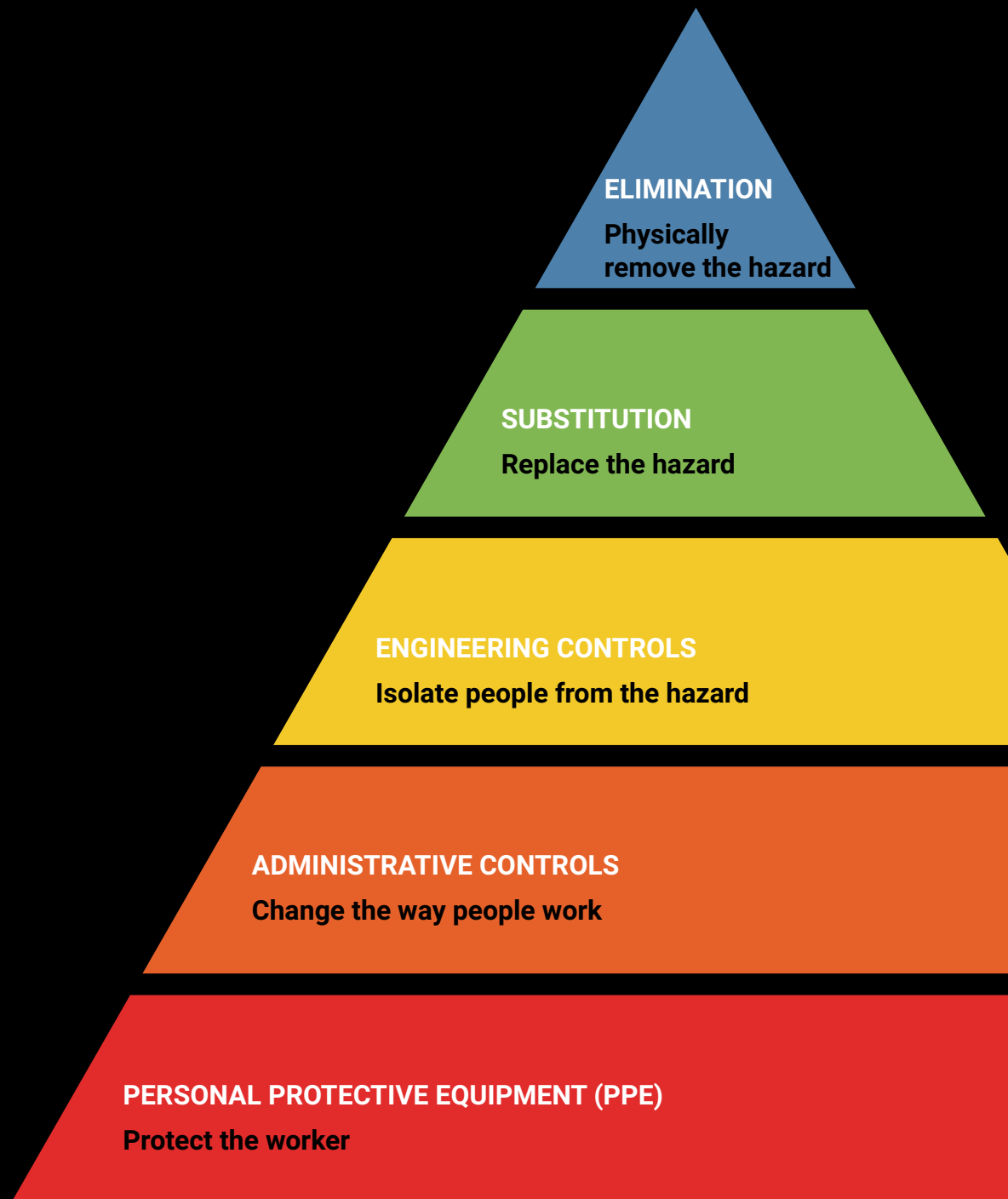
# Designing for Electrical Safety

## Hierarchy of Risk Control Methods

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**MOST  
EFFECTIVE**

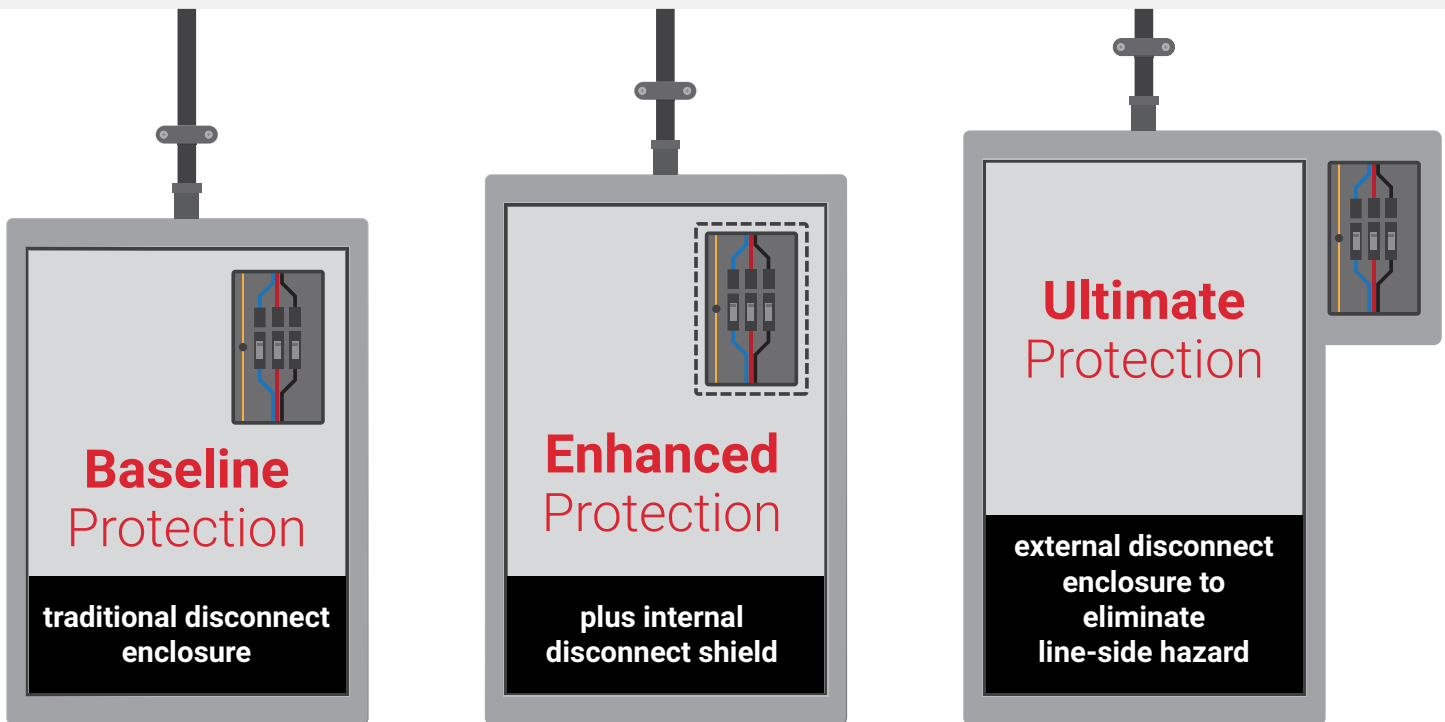
**LEAST  
EFFECTIVE**



Source: NFPA 70E: Hierarchy of Safety Controls

# Comprehensive portfolio of versatile, UL-tested safety solutions that reduce risk

nVent HOFFMAN offers customers flexibility in design with an extensive portfolio of enclosures to make installation easy while reducing or eliminating the risk of accidental contact with hazardous power.



We offer a broader range of enclosure products than competitors. Our enclosures are available in unibody and modular systems, with disconnect enclosures and accessory add-ons for all categories.

Versatile design and configuration options – in mild steel or stainless steel enclosures – are available to separate high and low voltage and isolate low- to hi-amp disconnect switches and circuit breakers.

Within our broad offering, we have the type rating requirement you need. Our products are engineered to last against dust, water, humidity and temperature.

We also have a comprehensive suite of add-on devices to enhance safety, based on the NPFA 70E hierarchy:

- **Windows** – for visual inspection in an energized enclosure (elimination)
- **InterSafe Data Interface Ports** – for programming maintenance in an energized enclosure (elimination)
- **External Data Pockets** – store documentation on the exterior of the enclosure (elimination)
- **Internal Disconnect Shield** – adds a barrier around the disconnect switch, shielding line-side power (engineering control)
- **Electrical and Mechanical Interlocks** – to prevent opening the enclosure while power is on (engineering control)
- **Door stops** – to prevent door backswings resulting in accidental contact with components (engineering control)
- **Dead front or swing panels** – for access to protected controls (engineering control)
- **Barrier panels** – to minimize the incidental contact or exposures to high voltage components while accessing the low voltage equipment (engineering control)

# Following the NFPA 70E Hierarchy of Risk Control Methods

1

**Basic electrical enclosure** protects equipment and minimal protection of employees with a barrier around electrical components.

- But... troubleshooting and maintenance are still required, which means enclosure needs to be opened, reintroducing risk of accidental contact

5

To reduce worker risk during performance of common tasks, **use barrier panels to separate high-, medium- and low-voltage components in separate enclosure bays.**

- Can reduce the level of PPE required by workers to perform maintenance or troubleshooting on low voltage bays

2

Remove power with a **disconnect enclosure** with multiple doors that can be mechanically or electronically **interlocked** to prevent opening enclosure until power is off, reducing exposure to energized components.

- Good baseline protection, but the risk of accidental line-side contact in the enclosure still exists

6

Use swing panels to isolate HMI, switches and push buttons in front of high-voltage components.

- Prevents unqualified workers from accessing the enclosure

3

Adding an **internal disconnect shield** to cover the disconnect switch provides further protection against accidental exposure while enabling access to other components.

- Enhanced protection, but risk is still present inside the main enclosure

7

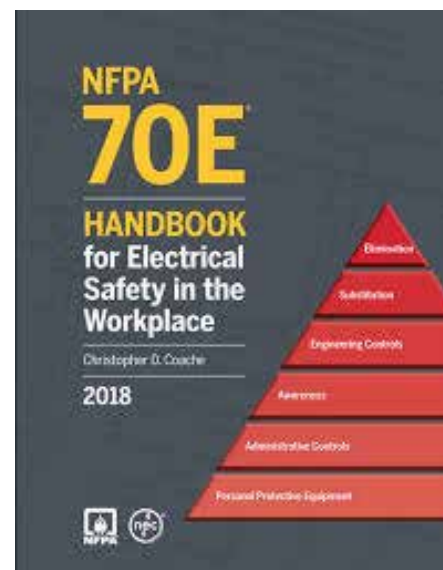
Add windows, external data pockets, door stops and data ports on enclosures.

- Eliminates the need to open the enclosure, further reducing risk of accidental contact

4

**Sequestr External Disconnect enclosure** isolates the whole line-side of the disconnect, lugs and cables included, for ultimate protection against exposure to live energy in the main enclosure.

- The ultimate protection, Sequestr eliminates the risk of accidental power contact in the main enclosure



## Building a culture of safety

True safety is not just about equipment. It's about people. Developing and maintaining a safe workplace requires sustained focus and effort to educate and train employees. nVent HOFFMAN is a thought leader in electrical safety and offers training resources to help increase awareness of electrical safety risks and educate about safer workplace practices.

### Resources available include:

- ✔ Arc flash white paper
- ✔ Arc flash protection products
- ✔ Arc flash infographic

### Video training on:

- ✔ Avoiding arc flash
- ✔ Recognizing an arc flash hazard
- ✔ Sequestr External Disconnect Installation
- ✔ Electrical Interlock Installation



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