



DEARBORN CENTRAL ENERGY PLANT

CASE STUDY

CMCE LIGHTNING SUPPRESSION SYSTEM

CASE STUDY

Protecting Critical Power Generation Infrastructure with CMCE Lightning Suppression

Dearborn Central Energy Plant – Dearborn, Michigan

For industrial power generation facilities, lightning is more than an equipment risk. A single direct strike can interrupt generation, damage critical electrical infrastructure, increase operating costs, and impact the facilities that depend on continuous power and steam service.

After experiencing a costly direct lightning strike, the **Dearborn Central Energy Plant** in Dearborn, Michigan, implemented **CMCE Lightning Suppression** as part of a proactive strategy to eliminate lightning risk and strengthen operational reliability.

The Challenge: A \$400,000 Lightning Event

In **2016**, a direct lightning strike impacted the plant's electrical substation.

The event resulted in approximately **\$400,000 in total financial impact**, including:

- Equipment repairs
- Preventive maintenance
- System recovery
- Purchased replacement power required to maintain service levels

The incident demonstrated that the true cost of a lightning strike can extend far beyond the equipment directly affected.

For a facility supporting continuous industrial operations, an electrical interruption can create broader consequences for plant uptime, power generation, steam service, and the operations that depend on that infrastructure.

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The Lightning Risk at Power Generation Facilities

Power generation facilities contain numerous assets that can be vulnerable to lightning, including:

- Electrical substations and switchgear
- Tall stacks and elevated structures
- Generation equipment
- Control and communication systems
- Electrical and grounding infrastructure
- Other critical systems required for continuous operations

At facilities where uptime is essential, lightning must therefore be treated as an **operational reliability** and **business continuity risk**, not simply an equipment protection concern.

The Solution: CMCE Lightning Suppression

Following the documented lightning event, the Dearborn Central Energy Plant incorporated **CMCE Lightning Suppression technology** into its lightning risk mitigation strategy.

CMCE units were strategically installed at **elevated locations throughout critical areas of the generation facility**, including elevated plant structures.

Unlike conventional lightning protection systems designed to intercept a lightning strike after attachment occurs, CMCE technology is designed to **eliminate the atmospheric conditions that contribute to upward streamer formation and eliminate the probability of lightning strike formation within the protected area**.

This provides the facility with a proactive approach to protecting critical electrical infrastructure, generation equipment, elevated structures, and plant operations from direct lightning strikes.



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The Result: A More Proactive Lightning Protection Strategy

The CMCE installation transformed the plant's approach to lightning risk from responding to the consequences of a strike to **eliminate the likelihood of direct strike formation within the protected area.**

For an industrial power generation facility where one lightning event had already created approximately **\$400,000 in costs**, the project demonstrates the importance of addressing lightning as part of a broader reliability and risk-management strategy.

The installation helps protect the infrastructure required to maintain continuous operations while reducing exposure to:

- Electrical equipment damage
- Generation interruption
- Replacement power costs
- Emergency repairs
- Preventive maintenance
- Operational disruption
- Downtime affecting connected industrial operations

Project Summary

Facility: Dearborn Central Energy Plant

Location: Dearborn, Michigan

Industry: Industrial Power Generation

Operating Environment: Continuous industrial operations

Documented Lightning Event: 2016

Area Impacted: Plant substation

Financial Impact: Approximately \$400,000

Costs Included: Repairs, preventive maintenance, system recovery, and purchased replacement power

Solution: CMCE Lightning Suppression

Installation: Strategic elevated placement across critical areas of the generation facility

Objective: Eliminate the probability of direct lightning strikes while supporting plant reliability, uptime, and business continuity.

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Why This Project Matters

For power generation facilities, the cost of lightning cannot be measured solely by the equipment damaged at the point of impact.

One strike can create a chain reaction of repair costs, replacement power expenses, operational disruption, and downtime.

The Dearborn Central Energy Plant project demonstrates why critical industrial facilities are taking a more proactive approach to lightning risk.

Instead of relying solely on technology designed to attract and receive a lightning strike, **CMCE Lightning Suppression is designed to prevent lightning strike formation within the protected area.**

For facilities where downtime carries significant operational and financial consequences, preventing the strike can be far more valuable than dealing with what happens after it occurs.

Protect the plant. Protect uptime. Prevent the strike.

To learn how CMCE Lightning Suppression can protect your power generation or industrial facility, **request a proposal or schedule a consultation** with Encore Land and Sea. Our team can review your facility's lightning risk and exposure and develop a customized CMCE protection design.

