

FREE SAFETY MINDER NEWSLETTER



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A Job Well Done is One That Never Ends

The Linden 640MW Cogeneration Plant

At the time of its construction in 1992, the Linden 640MW Cogeneration Plant in Linden, NJ was the largest facility of its kind in the U.S. S.M. Electric was the primary electrical contractor on the job, overseeing every aspect of the build, including the installation of 345kv gas-insulated switchgear. As the plant's primary electrical maintenance contractor, we've been a daily presence on the site ever since, managing routine repairs, equipment upgrades, new construction and the thousand-and-one maintenance issues that arise at such an enormous and critically important facility.



BEYOND SCHEDULED MAINTENANCE

Our involvement at the Linden plant goes beyond the standard scheduled maintenance contract (see the Spring issue of our Safety Minder Newsletter at www.smelectric.com for more on the benefits of scheduled maintenance). A facility of this size and nature –the plant supplies

electricity to Con-Edison, which in turn provides electric service to New York City and most of Westchester County, New York – requires constant vigilance. It must operate at peak efficiency 24 hours a day or an unplanned outage could occur, exposing millions of people to inconvenience and injury. While the initial construction was completed 13 years ago, the job of ensuring the facility's continuous and safe operation has never ended.

REPUTATION IS EVERYTHING

We were chosen to oversee the plant's ongoing electrical maintenance not just because we helped build the facility, but because during that build we demonstrated an unparalleled expertise, superior quality of work and an industry-leading safety record.

Coming together is a beginning, staying together is progress, and working together is success. –
Henry Ford

The fact that in 13 years we have never had an OSHA recordable accident at the Linden plant is no accident! Careful planning, meticulous safety standards, stringent lockout/tagout procedures, state-of-the-art equipment, protective clothing, and highly skilled and trained workers ensure that our job performance is superlative and our job sites are the industry's safest. That's why, despite having no formal maintenance contract, we continue to operate as an extension of Linden's maintenance department 13 years down the line.

ONE THING LEADS TO ANOTHER

In the beginning, most of our maintenance duties involved performing warranty repairs. At that point, we were still operating under the aegis of the general contractor hired to build the facility, Ebasco Contractors. Once the warranty period was over, we continued to take on projects independently as they arose, and soon we were averaging 10 purchase orders per month.

Most days, our project manager, John Schafer, attends daily planning meetings with the plant's maintenance supervisor and mechanical and electrical engineers to discuss upcoming maintenance needs and the status of work already in progress. At any given time there may be one or more open purchase orders for work requiring scores of electricians.

Our projects include everything from testing high voltage equipment to replacing 2000 feet of 15kv outdoor busduct to cleaning and inspecting transformers to upgrading a substation during a planned outage. In fact, planned outages, of which there are eight or nine per year, are particularly busy times, as they allow for maintenance that can only be performed when power is shut down.

The fact that IN 13 YEARS WE HAVE NEVER HAD AN OSHA RECORDABLE ACCIDENT AT THE LINDEN PLANT is no accident!

In addition to our ongoing maintenance work at both the Linden Cogen plant and ConocoPhillips refinery, S.M.Electric has been asked to train personnel from both companies. And, S.M. Electric has responded with high voltage and confined space training for the past several years.

expertise, manpower, reputation and commitment to safety to become a valued partner in the electrical maintenance of your facility. While we have the capability to maintain the largest, most complex sites, we also can scale our services to meet your particular needs. Either way, ongoing maintenance can ensure the smooth, efficient operation of your facility every day of the year.

Lightning Safety

Summer is peak season for one of nature's deadliest weather phenomena - lightning. Each bolt of lightning can extend over five miles in length, reach temperatures of approximately 50,000 degrees Fahrenheit and contain 100 million

In addition to our work for Linden, we also perform projects for other related contractors. For example, international energy giant ConocoPhillips has a refinery adjacent to the plant. We have performed numerous jobs for them over the years, including a recent 27kv upgrade project requiring 20 electricians. Another contractor, Jacobs Engineering, is overseeing new construction at the refinery. They have hired us in the early phases in support of that project.

A VALUED PARTNER

Whether we have taken part in the initial construction or not, S.M. Electric has the

S.M. Electric's Maintenance Examples



Linden Cogen

Re-installing a breaker following scheduled maintenance which consisted of: calibrating, cleaning and adjusting the existing breaker.



Conoco-Phillips Refinery

Maintaining a dust-free environment in order to perform installation.

electrical volts. Avoiding the possibility of being caught in a thunderstorm should be a top priority when working outdoors. By adhering to a few simple rules, you can significantly reduce your risk of being seriously injured or killed by lightning.

Look... Listen... Stop!

No job or task is more important than safeguarding your life. Be on the lookout for signs of an approaching storm, and if you observe one coming, take immediate action.

Look. If you observe a gathering of dark clouds in the sky and the wind picks up significantly, a thunderstorm could be on the way.

Listen. If you can hear thunder, even if the sky is clear, you are in danger of being struck by lightning.

Stop. If you see or hear a thunderstorm coming, stop working and take shelter immediately.

What Constitutes Shelter?

Buildings

A sturdy, enclosed building affords the best protection from lightning. However, just because you are out of the rain does not mean you are completely safe from being struck by lightning. Lightning can travel through water, metal pipes and phone lines to reach its victims, so even if you are able to make it inside an enclosed building, you may still be at risk. Here are some guidelines to follow when indoors during a thunderstorm:

- Stay away from windows and doors, as they can provide a direct path for lightning to enter.
- Do not talk on the phone.
- Do not take a shower or even wash your hands.
- Do not stand on or near concrete floors or walls, as they may have metal grids beneath them.

Note: Sheds, open shelters and other small buildings without plumbing, wiring or other grounding mechanisms offer little or no protection from lightning.

Cars

If there is no enclosed building on the job site, take shelter in your car. A hard-top car with the windows closed is relatively safe; however, be sure not to touch any metal inside the car.

If there is no shelter...

If you are on a job site where there is no adequate shelter, observe the

following rules should a thunderstorm strike:

- **Be the lowest point.** Lightning hits the tallest object, so if you are in an exposed area, crouch down as low as possible to the ground.
- **Stay away from trees.** You want to be twice as far away as a tree is tall in order to avoid injury should the tree be struck by lightning.
- **Avoid metal.** Large metal objects, such as a vehicle or generator, can conduct lightning, so don't lean on or touch any type of metal during a storm. Even smaller metal objects can cause burns.
- **Get out of water.** Water is a great conductor of electricity. If you are working near water, or even standing in a puddle with rubber boots, get out immediately.
- **Move away from other people.** Don't huddle in a group; you're more likely to get injured if someone else is struck.

Be Aware!

The most important way to protect yourself from being injured or killed by lightning is to be aware of the dangers, know what to do (and what not to do) in the event of a storm, and then do it! Don't try to finish your task before taking cover. At S.M. Electric, we want our jobs done well, but not at the risk of our workers' lives. Be safe, always!

Avoid Heat Stress

As you work outdoors this summer, keep an eye on your colleagues – and on yourself – for signs of heat-related ailments.

Mild heat stress symptoms include excessive sweating, painful spasms, tiny red bumps on the skin, dizziness, weakness, or excessive irritability. Treatment: rest in a cool, shaded area, drink water, and keep the skin clean and dry.

Moderate heat exhaustion shows itself in excessive sweating, thirst, fatigue, and headache. An affected person may also experience nausea, dizziness, a rapid and weak pulse, and cold, pale, or flushed skin. Treatment: place a cool compress on the forehead and neck, drink water and rest in a cool, shady area.

Heat stroke is detected by a lack of sweating, deep and rapid breathing, a rapid and weak pulse, and hot, dry, and flushed skin. Other symptoms include confusion, headache, nausea, dizziness, convulsions or loss of consciousness. Treatment: call for medical help immediately, then move to a cool shady area, remove outer clothing, increase air movement across the body, employ cool compresses and drink water.

Tips for preventing heat-related ailments:

- Drink 5 to 7 ounces of fluids every 20 minutes. Your thirst level will not keep up with the amount of water you are losing.
- Wear cotton.
- Eat lightly, and avoid caffeine.
- Certain medications increase the risk of heat stress. Check prescription labels, or ask your doctor.
- Stay in shape. Conditioned muscles generate less body heat.

S.M. Electric Company, Inc. has always believed that in order for our company to be strong, our industry must be strong as well. S.M. Electric continues to take an active leadership role in such industry and professional associations as N.E.C.A., A.S.A and the National Safety Council Utilities Division. These associations have reinforced our company's credo that "we build today for a better tomorrow."