

FREE SAFETY MINDER NEWSLETTER



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An Ounce of Prevention is Worth a Pound of Cure

THE BENEFITS OF SCHEDULED MAINTENANCE

It's 3:00 AM on a frigid winter's night, and your foreman calls with bad news - your plant's main generator is malfunctioning. Now there's a major power outage affecting half the city. Once repairs are completed and the power restored, you must consider - could it have been prevented?

Whether it's a power outage, a week of lost productivity at a pharmaceutical research plant or a fire at an industrial complex, a catastrophic failure of medium or high voltage equipment can be devastating. It's bad enough when these disasters occur due to factors outside your control, e.g., severe weather, but worse when they are the direct result of poorly maintained equipment.



Furthermore, when you spend millions of dollars to build or upgrade a state-of-the-art facility, it makes sense to invest in its ongoing operation. Regular preventive maintenance can help reduce or eliminate costly outages and keep critical systems, e.g., cogeneration plants, transportation lines and large corporate facilities up and running.

A typical maintenance service contract includes regular inspection of all equipment and replacement and/or upgrade of components and systems when necessary. Depending on the size of your plant or facility, it can require scores of skilled electrical workers on site daily.

While this represents a substantial financial commitment, it pales in comparison to the costs - both financial and otherwise - you might incur if an unplanned outage occurred.

THE FINANCIAL EXPENSE

When calculating the costs of a catastrophic outage, keep in mind that those associated with the repair and restoration of power are just the beginning. Lost productivity, higher insurance premiums, personal injury lawsuits filed by individuals or employees - all must be taken into account and provided for. Large, unexpected capital expenditures of this nature would certainly wreak havoc with your company's finances. By comparison, preventive maintenance costs are fixed and itemized in an annual contract. They can therefore be included in a fiscal year budget and amortized over the course of a year.

THE HUMAN COST

Beyond the financial benefits of regular maintenance are the issues of employee and public safety. Working on or near electrified equipment that is not regularly serviced is a risk. You don't want your first indication of faulty wiring to be a catastrophic fire in a building filled with hundreds of people. Nor do you want to endanger, or at the very least inconvenience, an entire community due to a power outage. As experts in on-the-job safety, we at S.M. Electric know that a safe work place requires meticulous planning and vigilance. We recommend that you include regularly scheduled maintenance as part of your safety program.

THE S.M. ELECTRIC ADVANTAGE

Once we have completed a construction project, most of our customers ask us to stay on and provide regular preventive maintenance; they want the same nationally-known integrity of service, highly skilled labor and thorough attention to safety they experienced during the initial installation. In addition, they know we have access to the best protective equipment and the latest testing equipment and methods. In short, they understand that we are most qualified to assess the viability of their medium to high voltage equipment because we have the most experienced personnel and state-of-the-art resources at our disposal. In addition to servicing existing clients' facilities, we also maintain those - from 500kv substations to commercial office buildings - that we have not previously worked on. Either way, with an S.M. Electric service agreement, your facility is in the best hands... year round.

A DISASTER WAITING TO HAPPEN

Rust is eating away at this transformer's enclosure, which could lead to a catastrophic power failure. Should this happen, it might be weeks before the transformer is replaced and power restored. A skilled maintenance worker would spot this problem and recommend a course of action before an outage occurs.

CASE HISTORY

BUZZI UNICEM USA

The Hercules Cement Company

The Hercules Cement Company is a long-time S.M. Electric maintenance client, and a good example of how regular maintenance can keep your plant or facility running smoothly, helping you avoid costly outages and reduce the risk of employee injuries or fatalities.

The cement manufacturing process creates a great deal of residual dust that can build up and eventually interfere with the operation of plant equipment. Each April, our most experienced electricians and techs descend on the company's Stockertown, PA facility to perform a thorough maintenance check, involving a full-scale clean-up, in-depth equipment survey and the repair or replacement of worn parts.

Our advanced team arrives on a Wednesday. The first order of business is to assess the plant's condition, locate those areas that need specialized attention and prepare the facility for the upcoming maintenance.

On Saturday, 45 highly trained S.



4160 MOTOR CONTROLLER

As noted in the statement from the plant chief electrician, this 4160 volt main fan drive starter/breaker was detected to have failing contacts held here by our electricians, note the Arcing heat damage. This would have taken the plant down if they failed for anywhere from a day to more than a week in "catastrophic gear failure" which could also have caused co-lateral damage to adjacent components and, during a major Arc fault, injured or killed a worker. This would have not been detected without a thorough maintenance plan.

M. Electric employees begin the strategically planned service. They shut down all powered equipment, following the stringent lockout/tagout rules and circuit grounding procedures- outlined by the Mine Safety and Health Administration. They then vacuum all the electrical equipment in the facility using heavy duty vacuum equipment, removing all traces of dust from visible surfaces and hidden or protected recesses.

Once the equipment is clean, they exercise, break down and examine all powered equipment, checking each component for rust, wear or any other problem that might affect its normal operation. Everything is then cleaned and reassembled and the power restored.

On Sunday morning we sit down with Hercules officials for a full review. We discuss which pieces of equipment are operating normally, and recommend which need to be replaced immediately and which may need replacing in the next year.

The annual 8-10 hour Saturday outage and five day routine maintenance program enables Hercules to operate at full capacity - not to mention worry-free - for the remainder of the year.

S.M. ELECTRIC/OSHA



BREAKER CALIBRATION

S.M. Electric technician is cleaning and re-calibrating a large motor drive starter at one of the plant's main switch gear rooms. The DC battery racks which control switch gear operation is also serviced as that can also lead to break down if not routinely serviced during planned outages. Again, besides gear damage in a failure, plant personnel are at risk in plants that don't have an efficient maintenance plan.

"As usual, the power outage at the Buzzi Unicem USA, Stockertown plant, on March 19, 2005, was well organized and a very successful endeavor. Your supervisors handled their personnel and areas efficiently and professionally."

"Once again, preventative

Training Update

As we've mentioned in past articles, S.M. Electric partners regularly with OSHA to develop and conduct outreach training programs. The most recent joint training event took place during the annual OSHA-sponsored Federal Safety and Health Council conference held in Puerto Rico in August, 2004. The purpose of the 6-day conference was to present and exchange information on Federal workers occupational health and safety programs, and share new OSHA program initiatives. Participants had an opportunity to attend a variety of keynote presentations, motivational sessions and safety training courses.

Based on our standing as an industry safety leader, we were asked by OSHA to direct a low and high voltage safety training course during the conference. Some of the major pharmaceutical manufacturing and power generating companies in Puerto Rico recently had been experiencing a higher incidence of safety problems, prompting OSHA to include a training program specific to those issues in the conference agenda. Our reputation for integrating safety planning into every aspect of our operations, along with our state-of-the-art safety practices and industry-low accident rate made us the natural choice to conduct this important, prevention-based course.

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.

maintenance paid off. The problems that were found with the contacts in # 1 - 4160 Volt main CCDC fan starter would have caused a major failure and costly downtime somewhere in the near future. We also resolved some potential problems that were found during our annual infrared testing survey. These more than likely would have caused failures to equipment and more downtime."

– V. Scott Paukovitch
Buzzi Unicem
Chief Electrician



These associations have reinforced our company's credo that "we build today for a better tomorrow."



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