

# Another Boston powerhouse!

We try to keep our work flow under control. There are the scheduled customer outages, shut downs and other assorted projects in the pipeline. And then we get The Call! On Thursday October 11 at 5:30pm our after hours associate received a call from a recycling plant in the Boston area. Their 9000 HP crusher motor had just swallowed a cast aluminum cooling fan and they needed to know if their new motor had sustained any damage.

The German-made motor, weighing in at 108,000 lbs. was a bit more than our in-house cranes could handle, so the motor arrived 24 hours later at a local rigging company we use. And on Friday afternoon the dismantling began.

The cast aluminum exhaust fan, located on top of the motor, had exploded. Some fragments went out the exhaust vent, some were trapped by the fan housing, and some dropped into the new motor. The company had weighed the material it was able to collect, reassembled the found fan pieces and determined that approximately 10% of the fan was still missing. Representatives of the recycler were on hand for the initial dismantling. The ironic point is that the fan was suspect and a replacement had already been scheduled to be installed the following week. Unfortunately the fan did not last that long.

The Longo crew worked late Friday night and late Saturday removing the rotor and examining it and the inside of the stator. A few small pieces of the cast fan blade were found, but no harm had been inflicted on the motor. The crew then thoroughly vacuumed and wiped down the rotor and stator prior to reassembly. On Saturday night, a representative from the German motor manufacturer

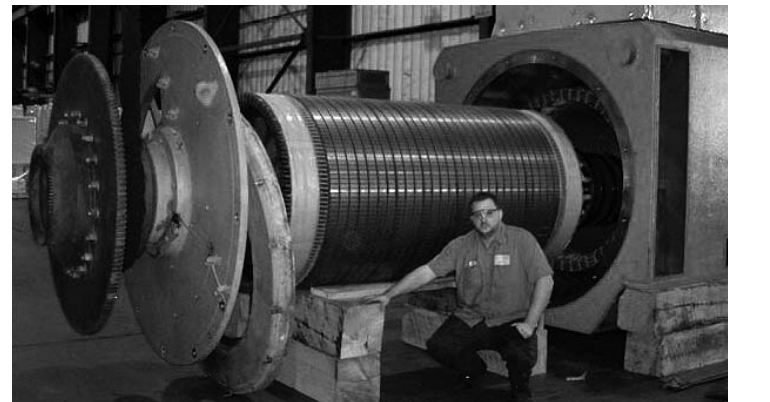
*Below: The rigging company, with its 100 ton crane, made the unloading and positioning of the motor a very secure operation. While the motor was huge, one of the crew stated, "I thought it would've been taller". The replacement exhaust fan unit was taller than the older one shown here. As such it had to be shipped separate of the motor to insure that it did not hit any of the overpasses, etc.*



arrived with the new fan and it was quickly installed. He was pleased and surprised by the work done by the Longo crew. He found himself with nothing to direct or supervise and was heard muttering something about seeing the sights of New York City so the trip would not be a total waste!

The motor, with its new fan installed, was on the road Sunday night and up and running soon after its arrival back in the Boston area. The crusher that is driven by this 9,000 HP motor is one of the largest in the country. Each of the 1000 lb "hammers" that are used to smash up everything, including engine blocks, into fist-size pieces, have a force in excess of 1,000,000 lbs. per square inch.

Here is another example of how Longo has been able to utilize its own capabilities and its outside resources to take care of a customer's problem within a short turn around time.



*Above: Dan Nykyforuk, one of Longo's shop technicians, worked with the Field Service team in handling the removal and inspection of the rotor/stator. It looks like Dan is posing after having just "bagged" his trophy motor.*



*Left: Thanks again to the 100 ton crane, the removal of the rotor from this mammoth motor was done with the ease of doing a 500 hp motor back in the shop.*

*Below: Hi-tech gives way to hands-on and eyes-on in order to make sure that there is nothing left from the exploding cast aluminum fan blade.*



## PROFESSIONAL SEMINAR SERIES

For 2008 Longo Seminars will be a little different. We will still keep the live format where you can interact with the presenter and other participants, but we want to give you more input as to the subject matter we offer.

## interactive SEMINARS

When you sign up for one of our seminars this year you will be able to ask us to address a specific area of the seminar subject, *before the seminar*. It helps you get the information you need and it helps the presenter make the seminars topical and to the point. More than likely, a lot of your inquiries will be covered in the course of the presentation, but we will respond to those areas that you need to know about.

Once again, it is Longo's aim to respond to our customers' needs whether in the shop or in the classroom. And our one slogan says it all...*"Service through knowledge"*®

- TENTATIVE LIST OF SEMINARS FOR 2008**
- Philadelphia**
  - Motors
  - (Battleship New Jersey)
  - Wharton**
  - Pumps
  - Pdm /Vibration
  - Switchgear
  - New York City**

Contact your Longo sales representative or e-mail [info@elongo.com](mailto:info@elongo.com) for more NYC seminar information.



*Power Up campers really get into it from building electrical devices to testing. Maybe in, say, 2017 one of these campers will be working on your equipment!*

# Longo & DaVinci

The DaVinci Center is a unique learning facility in Allentown, PA designed to develop young peoples curiosity, imagination and creativity. One of their summer camp programs for 5th to 7th graders is entitled "Power Up". This specific program prompts students to investigate electricity and alternative forms of energy. It isn't just theory. The children jump right in making things that really work and learning how they work in the process. One such activity was building an actual wind turbine. Making paper blades spin moved magnets over coils of wire generating electricity to light an LED.

Another project had the campers making a "shake and light" flashlight with magnet wire. The kids really got a kick out of this one while learning the fundamental of electricity. Longo has been a supporter of the Center through donations of materials, such as the magnet wire for these activities.



We do a fair amount of generator work and along with that are the exciters. Most are the brush type that produce the necessary DC required for the field of the generator. In the early 70's a new brushless exciter became popular with the promise of reduced parts and maintenance. In this case the AC output is rectified by diodes to convert AC to the DC required by the generators.

That theory of reduced maintenance cost is probably fine for moderate sized generators, but not for what appeared in our shop. The exciter alone was over 14 feet in length. In addition to its physical size it had a capacity of 5400KW! The generator it was "exciting" was equally monumental at 862 MW. Liquid hydrogen is used to cool the generator.

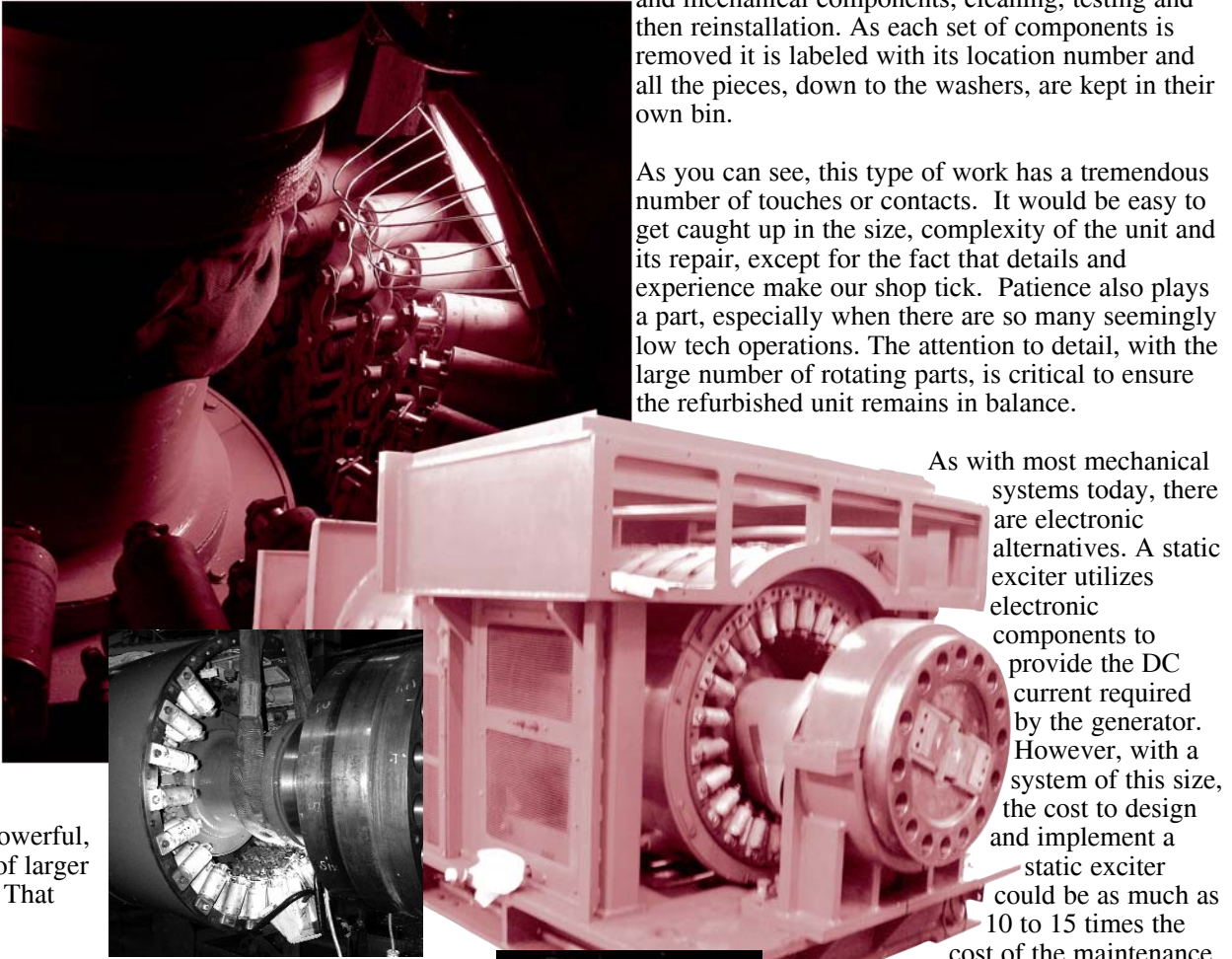
With an exciter this powerful, it is not just a matter of larger diodes, etc, but more. That

includes the fuses, capacitors, bolts, washers, etc. These exciters suffer wear, accumulation of dirt and the stresses associated with long extreme exposure to 3600 RPM. Maintenance involves removing each of the electrical and mechanical components, cleaning, testing and then reinstallation. As each set of components is removed it is labeled with its location number and all the pieces, down to the washers, are kept in their own bin.

As you can see, this type of work has a tremendous number of touches or contacts. It would be easy to get caught up in the size, complexity of the unit and its repair, except for the fact that details and experience make our shop tick. Patience also plays a part, especially when there are so many seemingly low tech operations. The attention to detail, with the large number of rotating parts, is critical to ensure the refurbished unit remains in balance.

As with most mechanical systems today, there are electronic alternatives. A static exciter utilizes electronic components to provide the DC current required by the generator. However, with a system of this size, the cost to design and implement a static exciter could be as much as 10 to 15 times the cost of the maintenance on a brushless exciter. So for

now, Longo will be excited whether it is a brush or brushless job coming through the door.



*With balance such a critical aspect of the project, it is essential that all the components, the diodes, fuses and even down to the washers are kept together. Each "family" of components is marked with their position number. To take it one step further, they are all kept in their own containers through out the process. Although almost mundane, the amount of touches on this unit is extremely high when you extrapolate the numbers. This is where a professional approach is essential to ensure each and every item removed and replaced accurately.*





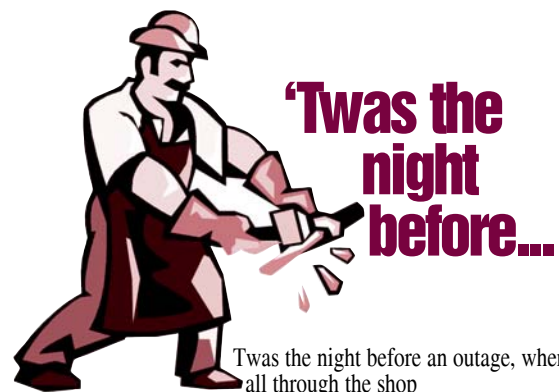
Line to Load...

MOTORS PUMPS CONTROLS FANS GENERATORS TRANSFORMERS

Grid of 12 monthly calendars from January to December.

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'Twas the night before...

'Twas the night before an outage, when all through the shop...

The technicians were nestled all snug in their beds, While visions of windings danced in their heads.

When out in the driveway there arose such a clatter, I sprang from the desk to see what was the matter.

The moon on the tops of the parked semi trucks Gave the luster of mid-day to the impending ruckus.

With a little old driver, not really awake, I yelled out, "Hey watch it, watch that brake!"

"Now Charlie! Now Donny! Now Walt On, Jim! On, Regino! On Dom and Pat!

The crew was getting into it now, Whirrr, slam, bang and pow Look at them tackle that vertical pump

And then, in a moment in the awful din I sensed something different was coming in.

He was dressed all in black, from his head to his shoe A Longo t-shirt covered with grease and grime too!

His eyes-how they twinkled! his hands greasy and gritty His muscles they flexed, his mind singing some ditty!

He spoke not a word, but went straight to his work, Pulled all the bolts, then turned with a jerk.

The handle of a screw driver held tight in his teeth, The acetylene smoke encircled his head like a wreath.

He sprang to his bench, to his team gave a shout, "Come on boys, this is what it's about!"

About the Author and the original Poem

Clement Clarke Moore's famous poem, which he named "A Visit From St. Nicholas," was published for the first time on December 23, 1823 by a New York newspaper, the Sentinel.

Despite his accomplishments, Clement Clarke Moore is remembered only for "Twas the Night Before Christmas," which legend says he wrote on Christmas Eve in 1822.

Moore read the poem to his wife and children the night he wrote it, and supposedly thought no more about it. But a family friend heard about it and submitted the poem to the Sentinel, a newspaper in upstate New York,

Because of his "mere trifle," as he called it, 175 years ago Clement Clarke Moore almost single-handedly defined our now timeless image of Santa Claus.



ROUTING SLIP Review and Pass on as indicated

TO TO TO

THE LONGO LETTER

WINTER 2007

SPORTS QUIZ

- 1. The 1985 New England Patriots went all the way to Super Bowl XX. Which of these statements are correct? a. They shut out both teams in the AFC Divisional and AFC Championship games...

The Longo Letter is published by Longo Electrical-Mechanical, 1 Harry Shupe Blvd., Wharton, NJ 07885.



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Everything is looking...

Bright & Shiny

The year has come and gone leaving us better off than when we began it in January. A lot of hard work throughout the year began to produce results in the latter half of 2007 and will definitely bear fruit in early 2008.

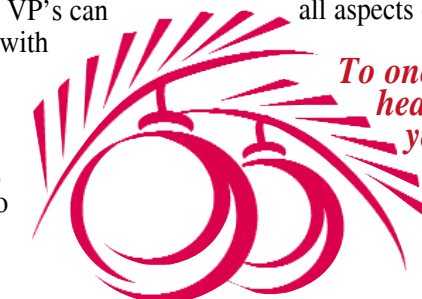
Our Philadelphia operation has evolved from new to an established facility and we are seeing a lot more interest in our products and services across the Delaware.

Our "line to load" capabilities are providing us with a strong competitive advantage. Everyone from maintenance managers to purchasing VP's can appreciate the simplicity of working with one quality vendor instead of two or three on each job.

While we can do a lot of things well, we stick to what we know and can do

best. We would rather turn down a project and look forward to another opportunity with a customer than try and be a hero by tackling something we are not equipped to do.

It is the time of year to be grateful and say a word of thanks to you, our customers, who allow us to apply our skills and craft on your behalf.



To one and all, have a happy, healthy and prosperous new year.