



When the electric vehicles were introduced there wasn't a lot of attention paid to their long term battery life since the projected life span was 10 years. Some people began having visions of dead Lithium-ion batteries in piles next to the dead lead acid batteries at your local junk yard. But, Hey! There was plenty of time to figure out what to do with them.

The 10 year mark has arrived and instead of piles of these batteries in a land fill, they are being reconditioned, recharged and adapted to new uses. Avoiding the junk yard!

Since we, the USA, are so well adapted to fill voids in a market, many companies now have the developed the technology bring these dead batteries back to life. There is no need to reinvent the battery from scratch, just bring it back to life the new technology is working just fine. You might say just in time, because every year from here on out both the supply and the demand will only increase.

Depending on the condition, power, etc. these batteries can be reconditioned, reconfigured and rebuilt to fill several growing markets. First, of course is the older EV's that are looking for an cheaper alternative to buying new OEM batteries. A non-automotive route for these batteries are backup storage units for everything from residential to major industries. While the battery industry is working on new and more effective batteries, these restored EV batteries are quite well suited to their new life. The difference between the demands of an EV and that of a storage system are substantial and the EV batteries seem to have the upper hand,



Fantasy, football, fantasy baseball, fantasy, etc...Looking at the US coal business today is somewhat like playing Fantasy Energy with coal as one of the hot teams!

With Obama's efforts in place for several years the coal business was dying. Legislation, regulation, etc. stifled the ability to even mine coal much less have a market of coal fired plants needing their coal.

U.S. coal production fell to 739 million tons last year, the lowest level in almost four decades. From 2011 through 2016, the coal mining industry went from 1.085 mil tons per year to 740 tons and in the process lost about 60,000 jobs, leaving just over 77,000

miners, according to preliminary Labor Department data that excludes mine office workers.

However, perhaps desperate for good news, there are towns in the east talking about reopening mines, rehiring, bonuses, etc. Their product, called "met-coal" is particularly suited to the steel business. The miners hung on Trump's words about bringing back the coal business and helped to elect him. Now they are waiting to see if they can get back in to the mines, even though the number of jobs will be far fewer than when the down turn began. During the last couple of years automation has eliminated quite a few jobs. On the positive side changes in international coal production should reopen doors over seas.

Even if new legislation eliminates some of the obstacles of the previous administration, it is unclear how big or fast the coal turn around will, if it can happen at all.

Whether real or "fake news" there is a buzz about the coal industry right now.



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THE LONGO LETTER

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A 10 minute charge???



Many urban centers have been running hybrid buses, but now completely electric buses are on the streets. This is because the power is now acceptable and certainly the rapid charging system makes them viable for every day use. The result is a vehicle that is defining the future of clean, quiet transportation with:

- An acceleration from 0 to 20 mph in 6.8 seconds
- The ability to take steep hills with a gradeability of 15.5%
- A curb weight of 26,000-33,000 lbs., the lightest vehicle in its class

Proterra's high-voltage overhead charging system uses robotic control (and some autonomous software on the bus) to replenish bus batteries in as little as 10 minutes, depending on the size of the battery pack. Charging at 250-1000V (DC) and up to 1400A, the system is eight times faster than the CHAdeMO fast-charging standard and between three and four times faster than Tesla's Superchargers.

These buses run a route of 40-60 miles. By the time they are returning to there station or origin of their trip they are ready for a recharge. A short 10 minute recharge and they are ready to hit their route again. The batteries are designed for frequent deep recycling in order to make the operation viable.

Articles inside

Multiple pump repairs

Coal on the rise?

Battery graveyard

Super buses



www.elongo.com
We have been updating our website, so stop on by and see what is new and interesting!



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Joseph M. Longo
President

Yes, its big. This spring we had several huge pumps go through our shop. We knew they were coming, just wished they were more spread out, time wise.

Have to give a big "Atta boy" to both our shop and field service crews for their ability take whatever comes through our doors in stride. Most all of our technicians can and have worked on both motors and pumps and the flexibility is just one of our Longo Advantages.

We recently had a retirement party for one of our associates. She was with Longo for 48 years and handled a lot of different assignments over the years. Very willing to do whatever it took to help Longo keep growing. That was vital in the early days when we were quite a bit smaller than we are now. Wishing her a well deserved retirement.

While we would never push our bread and butter businesses aside there are some intriguing new aspects to the energy business. From the ever increasing amount of wind and solar, there are various power storage scenarios that are gradually changing the landscape.

The utilities are in an awkward position, having to be sure to have the power to meet demand, however that demand is no longer a constant. Private industries are beginning to utilize solar and wind in house or contract with wind and solar farms directly by passing the traditional grid.

For both security purposes and maintaining an even power supply, batteries have become a

relatively simple and effective solution.

Of course just when this all seems so simple, the supply of rare earths can raise its ugly head.

On a very up beat note we had a great time at the NJWEA show in Atlantic City. Many of the visitors wondered where Norton was.

Two years ago we had large cutout of Art Carney and we took pictures of customers with Art. I guess Norton will have to return next year for another command performance.

Have safe and very enjoyable summer.



Pumps: Performance matching their size

Spring outages bring major repair scenarios.



Once the pumps are inhouse and disassembled there are various sections and parts located throughout the our Wharton main bay and the warehouse.

We do a lot of pump repairs. We work on a lot of really, really big pumps. It is not a headache when they come in one at a time. This spring we were waiting for the several of the mega pump jobs to open up, but not all at the same time! As you can



see from the side bar, they are substantial projects, not only the work, but the sizes as well. There was no pushing the work back since the customers had scheduled these repairs and we did not have the luxury of changing dates. The first thing to do is get the pumps back to the shop as soon as possible.

Field Service

We don't have dedicated pump teams or motor teams. Our field service technicians have removed and installed thousands of pumps and motors, all makes and models and from all sorts of locations.

One way to avoid problems is making sure the right equipment is on site and on time. Having a lot of experience with giant cranes and rigging crews means a minimum of time spent explaining the job and the assignment. With this expertise they can go from one extraction to the next regardless of the situation. A real asset when we get in a crunch like this spring.

Plant activity

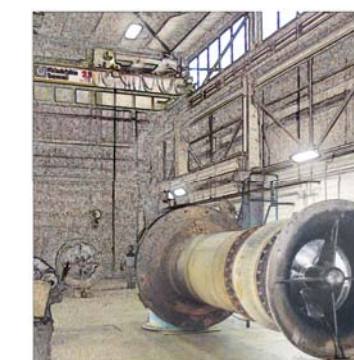
Logistics is name of the game. Our shop area is big, but not enough to handles these at one time. When specific pumps are coming in we need to make room for them as they arrive. One way is to tear them down as they arrive and remove the components to their assigned areas. Having done this many times it is well orchestrated with no fuss.

Several of our technicians, under the supervision of the shop manager, carefully remove the pumps from the flatbeds and place them on the shop floor to be safely disassembled. Suspended from our 25 ton cranes, even a slow rolling tilt can be dangerous. Since these large pumps are awkward to lift and move, experience takes over to assure they are secure. Our chief pump mechanic, with help from some shop technicians, begin the

disassembly. If the motor is to be repaired as well, it is removed to our second bay where it is tested and repair scenarios are put in place.

What's wrong

While our field people and the customers have thoughts on why the pump is not running right, we have to examine the suspect parts, and all the rest, to be sure we don't miss something that will come back to haunt us later on. The worst thing is submitting a report on the damage and the repairs needed and half way through the repair discovering another problem. It is not just awkward, but often delays the completion date and obviously moves the installation date as well, unless we do "all hands on deck" to make it happen on time. It is interesting that when the pressure is on, there is no screaming or running around in the plant. Everyone exudes a calm confidence that we will get things done on time and done right.



Mean while Customer Service is in the process of ordering parts and any outside services. Standard parts, such as bearings, etc. are normally no problem. When it comes to outside services, rechroming shafts, etc. it can be time consuming. Ordering new shafts and other pump specific parts means our customer service people will be doing what ever it takes to ensure parts arrive on time.

From here on it is cleaning, painting and gathering components with an eye to when reassembly can take place. Again logistics takes center stage determining which pump and motor will be ready and when. During the process quality control makes its presence felt so that there is no need to stop, go back, tear down and check on something that is not right. One final check any they are ready to leave. Then the shop and field service coordinate their efforts with the customer for the installation.

In the beginning the schedule of field service and shop repairs are very clean and impressive. By the time the last pump leaves the shop that schedule often looks like spaghetti, but the jobs get done.

2 1600hp motors with Flowserv Vert turbine pumps Cooling tower units.
GPM: 54,000 Head: 71'
Field service remove, shop repair, field install in 6 weeks

Pump #1. GPM: approx. 150,000 Head: 45' Effluent water
Failed due to pump spinning backwards at full speed and motor started. Pump shaft bent and twisted causing lip seal failure. Grease ran out and top bearing failed.
Field service remove, shop repair, field install in 12 weeks

1 250Hp 700Rpm motor w/ Peerless Vert turbine pump
GPM: 23,500 Head: 34'
Overhaul, replace suction bell
Field service remove, shop repair, field install in 6 months

2 50hp 1800rpm motors with Goulds 2 stage Vert turbine pumps Cooling Tower Water
Field service remove, shop repair, field install.

1 125Hp 1800Rpm motor with 6 stage vert turbine pump Hotwell pump (water)
GPM: 800 Head: 367'
Field service remove, shop repair, field install. Must be done in 14 days

ELECTRICIAN



- In the first inning of the game, who might be on the receiving end of a little "chin music"? a. **the batter** b. the pitcher c. the umpire d. the visiting team.
- Who doesn't love an extra inning game here in the tenth? When the announcer for the Montreal Expos refers to the bullpen ace's "papillon", to what pitch does he refer? a. curveball b. fastball c. **knuckleball** d. slider
- After the seventh inning stretch, your best friend returns to his seat and tells you the home team is "hitting the interstate". Is that a good thing or a bad thing? a. good thing b. both good and bad c. neither good nor bad d. **bad thing**
- It's the bottom of the fifth, a real pitcher's duel. How would you describe the "55 ft. curve ball" the set up man just threw? a. practice pitch b. pitched ball breaking close to the plate c. pitched ball in the dirt d. **pitched ball that doesn't break at all**
- In the third, one of the bleacher fans is overheard discussing "the tools of ignorance". What is he talking about? a. relief pitchers b. the scoreboards c. **catcher's gear** d. broken bats