

BULLETIN

**SEATTLE CITY
LIGHT UTILIZES ITS
PAST TO CHANGE
ITS FUTURE**



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By Nathan MacDonald



Electricity can be dangerous.

While that may seem like an obvious statement for most, the dangers within our industry are sometimes overlooked and often unseen. As if handling high-voltage electricity alone wasn't dangerous enough, utility employees perform their job in a variety of elements like extreme weather conditions, in underground vaults, and above the city landscape. Now, no one goes to work in the morning with the intent of being unsafe, but accidents do happen. Sometimes, it's because of an oversight of an existing issue. How a utility responds to that issue is key to its safety successes in the future.

Seattle City Light's focus on its safety culture today is predicated on what it's learned in the past. Keystone incidents have prompted the utility to think beyond the standard procedures to act, creating a safer workplace for its employees and the community it serves. In 2010 and 2015, City Light experienced multiple safety incidents involving employees and the community. These incidents created a wake-up call within the utility, leading to actions built on innovation, agency, and listening.

Detecting contact voltage in the Emerald City

The sun is setting on a fall day in Seattle. As commuters filter out of downtown, a white truck begins to patrol the streets below the Space Needle. For Chris Newton and Jose Colón, employees for Power Survey Company, their shift has just begun.

For weeks, Newton and Colón have tested more than 35,000 structures for something invisible but potentially dangerous: contact voltage. From a pinched wire inside of a streetlight to a utility hole cover touching an exposed wire, contact voltage occurs when the surface of a metal structure becomes electrified. Depending on the amount of voltage, it can be lethal to humans and animals alike. For City Light, a tragic 2010 incident involving the death of a dog prompted action. City Light contracted with PSC to prevent another incident, adding another layer to the safety culture of one of the nation's largest public utilities.

The innovative technology employed by PSC can detect contact voltage from as far as 30 feet away. PSC's truck serves as the command center, with a large piece of equipment that looks like a grill guard attached to the back and two cameras facing the road mounted in the bed of the truck. Inside the cabin, a laptop sits on the center console with a feed of still photos from the cameras and a continuous line that looks like an EKG monitor. When they pass any high voltage, be it from an overhead powerline or a lit sign for a private business, the laptop begins to whine. The higher the pitch, the higher the voltage.

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Crews restoring power in a storm during a significant outage in October 2017. Photos by Seattle City Light/Koryn Kennedy.



Power Survey Company's Chris Newton and Jose Colón surveying the area in downtown Seattle.



Once possible contact voltage is detected, PSC checks the metal structures within the area.



Electric power systems of all sizes deal with contact and stray voltage. It is a common risk when delivering electricity. The combination of continuous construction (a haven for stray voltage), the wear and tear of a large infrastructure, and the occasional rodent chewing through wires create prime opportunities for a structure to become electrically charged. It's not something that can be mitigated completely. Rather, it is a reality of working with electricity in such a booming city like Seattle. Checking for the cause of contact voltage is simple, and it's something that can potentially save someone from being electrocuted. By conducting these voltage checks, City Light workers can take immediate action and prevent any further issues before they arise.

"Make no mistake, this is a public safety issue," said City Light Joint Use and Street Light Engineering Manager Steve Crume. "I believe that checking for stray voltage of all levels should become a utility best practice across the country. Otherwise, you won't know there's a problem until an accident happens. We have a responsibility to people on the street, contractors working on our equipment, and our employees."

Safety from the ground up

The yearly city-wide scan for contact voltage by PSC lasts about eight weeks, so how does City Light stay vigilant against contact voltage and keep the community and its employees as safe as possible the rest of the year? The utility established a robust and effective safety culture embraced by executives and employees in the field and the office.

With each case and unique cause, City Light takes measures to alleviate the issue and create protocols to prevent it from happening again. Crume and his City Light team see detecting contact voltage as a critical measure. Not only does it keep the public and employees safe, but it also creates new moments to identify other opportunities to become a safer utility.

"We've instituted protocols both with our internal street-light crews and our contract crews," said Crume. "When an employee approaches a structure that has the potential to become electrified, they are required to test it with their manual testers to see if there is contact voltage on the pole. After they complete maintenance activity, their last step is to test it again to make sure that they haven't pinched a wire. While this single step could seem small, it is a large step towards keeping our work safe and efficient."

DaVonna Johnson, City Light's chief administrative services officer, believes that safety begins with the employees on the frontlines. The two-step authorization process created in the field is a prime example of how a major problem can have a simple solution.

"Safety is everyone's responsibility," said Johnson. "I need to not only think about my safety but also the safety of those around me. We all need to take care of each other. As the administrative services officer, with responsibilities for human resources and safety, it's my job to listen to our employees and ask, 'How can we support you?'"

For nearly a decade, City Light has made considerable progress to create a strong safety culture within the utility. It has become a culture that goes beyond establishing standards from the top down; creating a collaborative effort that listens to

those in the field for new processes and new, more ergonomic techniques to do the work. Through it all, the employees and the community they serve were at the forefront of the work along with the singular focus of creating a zero accidents workplace culture.

Stand down for safety

City Light's safety culture has evolved in multiple stages. Years ago, the utility hired a consultant to get a better idea of where City Light was regarding their safety. City Light implemented the consultant's recommendations, and the safety numbers began shifting in a positive direction, but there was still room for improvement and work to be done. Then, in 2015, the safety culture reached a critical juncture in City Light's history. After a string of incidents, one of which resulted in a hospital visit for an employee, the executive team decided it was time to right the ship.

They decided it was time to stand down.

On December 2, 2015, all City Light employees, from dam operators to line workers, to office employees and everyone in between, paused their work for two hours to address safety. Jim Baggs, the interim CEO and general manager at City Light at the time, opened the morning with a talk from a City Light service center and was simulcasted to conference rooms and facilities across the state. The officers and directors served as facilitators during the stand down to work with employees to discuss what the utility could do to become safer, and employees reflected on their practices to think about how they could be safer themselves. Some ideas were structural; others were what they could do with their work group to become safer. The utility also included the IBEW (International Brotherhood of Electrical Workers union) to ensure that both employees and their advocates were heard and supported in these conversations.

Baggs, the current interim CEO and general manager at City Light, recognizes that the idea of totally suspending all operations for two hours out of a work day may have seemed excessive for some, but was both critical and proactive for City Light's safety culture.

"There had been a few accidents that were serious and scary," said Baggs. "We decided that it was time to take a step back and reevaluate what we're doing. It got our employees' attention and became a turning point at City Light."

Bottom-up solutions with top-down support

Since 2007, City Light has advanced the idea of creating a positive safety culture. The program is called Grassroots Safety. This evolution has involved every work unit in the utility in some way, creating a forum for focusing on safety culture through employee-led projects and programs. One of the signature campaigns to come out of this new era of employee engagement was created by one of the utility's grassroots safety team. The team realized that work-related safety messages could quickly grow stale and would soon be ignored. But what if employees saw themselves in the message? They decided to create a message that addressed not just their day-to-day work at City Light, but their families and hobbies. So the team reached out to the utility through a weekly internal newsletter and encouraged employees to send in a photo of themselves off

the clock enjoying life. The campaign was called “The Other 16” and has become a fixture throughout the utility. It serves as a reminder and incentive to keep safe so employees can enjoy the “other 16” hours when they are not at work.

The Other 16 campaign is one of many proactive initiatives that City Light and its employees have created. Some of their other initiatives include an annual safety fair, an event for the utility to come together and learn about the new trends and practices within the field; and the utility’s safety moment, a short moment before meetings and events to share a safety tip or to assign roles in case of an emergency. These events and moments are meant to keep safety top of mind, regardless of status or position.

“These are all employee-created and developed initiatives. It’s our job as executives to support these projects, help cultivate these ideas, and secure funding to make these initiatives a reality,” explained Johnson. “Our employees are creative. They have endless ideas. A lot of our safety work has come from our employees saying, ‘This could be a better way to stay safe.’ The employees continue to be a driving force in the revamping of our safety culture here at City Light. While you need strong, established policies and procedures, a huge component of safety is supporting a bottom-up approach that creates utility-wide buy-in. When new employees join our workforce, that is what they learn. It becomes the touchstone for the organization.”

Moving forward

Like detecting contact voltage, progress has been made within the safety culture at City Light, but there is still room for improvement. The goal is, and always will be, zero accidents. City Light continues to track accidents and near-misses through analytics and data tracking to detect patterns and look for other opportunities to improve. The utility will continue to look to their employees for new ideas to create a safer workplace and for innovative ideas to blossom.

“Our nearly 2,000 employees are a part of this community. Our customers are also our employees’ neighbors,” said Baggs. “It’s our responsibility as an employer to look out for the people who work for us. But more importantly, the people we serve are in our community, whether they are our employees or our customers. We believe that one of our fundamental responsibilities in the business that we’re in is that everybody who comes to work in the morning can go home at night and be with their loved ones.” **NWPPA**

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Norm, an anthropomorphic safety cone, is City Light’s safety mascot.



The Safety, Health and Wellness Fair was a big hit last year, with hundreds of employees stopping by to meet safety equipment vendors and learn about wellness.



Examples of the Other 16 campaign. Each poster includes a City Light employee.