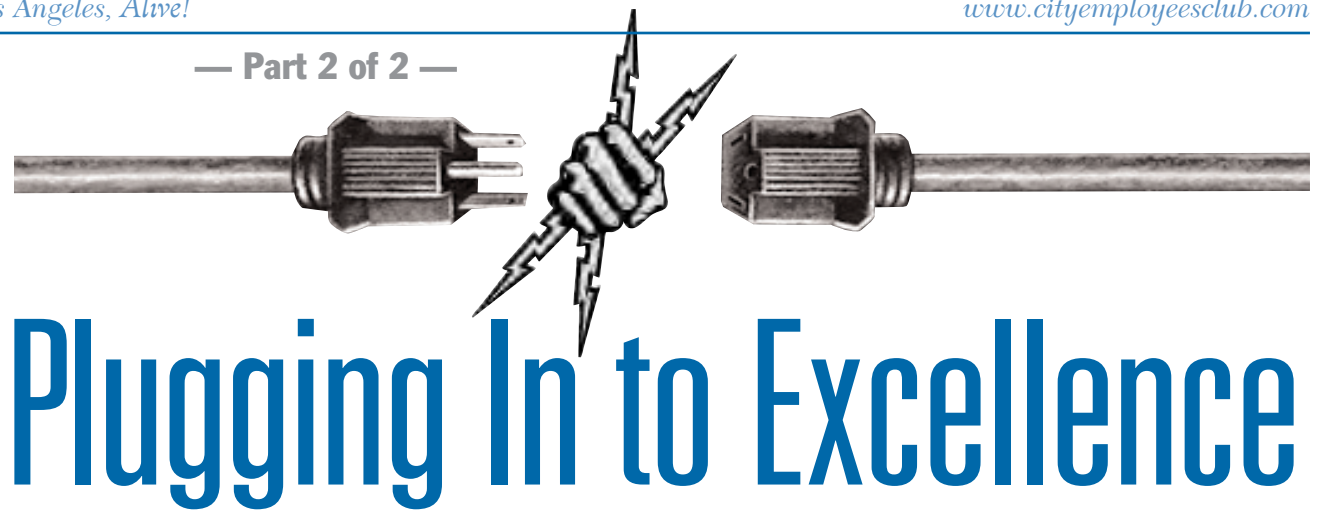


— Part 2 of 2 —

AMP



Larry Keller, Executive Director, Port of LA



Plugging In to Excellence

Cooperation brings City departments together to create true global innovation.

In last month's *Alive!*, we published the first part of a long story about a truly innovative program lead by the Harbor Department in partnership with the DWP, the Mayor's Office, the City Council, Building and Safety, and others. The program, called AMP, brings shore power to cargo ships in dock, rather than having the ships generate their own power, usually by fume-emitting diesel engines. This true innovation helps the environment, keeps nearby communities cleaner, and demonstrates the power of City employees working together.

When we left off, Larry Keller, executive director of the Harbor Dept., had talked about the extraordinary lengths the City employees went to develop the AMP system. In the conclusion to his interview, below, Mr. Keller describes the cooperation that made the project happen; the fact that other harbors want this technology; and the future of AMP. —Ed.

Alive! With the cooperation of the employees in the Harbor Dept., it sounds like the way a real business would act.

Keller: Yes, this is an enterprise. Generally speaking we can conceive a project, design it, build it and see it done, you know, and it gets done here. There is a lot of job satisfaction for folks who work here because they can see something through from beginning to end. There are great City employees all over the place but a lot of them are dealing with process. We're kind of a landlord operation here and so we take a lot of pride and our people take a lot of pride, work gets done here too. It's great.

Alive! Tell us about the involvement of the DWP.

Keller: Dave Wiggs, my counterpart at the DWP, and Frank Salas, his deputy, were on the original mayor's trip. It was really important that they be there when we began discussing electrification of vessels with a client. We obviously needed their cooperation because they built the backland facilities for this where the line power came down, they bought the huge transformers that perform the initial step down on the thing. As the power came, they continue to be partners as we go forward in the other terminals, which we are going to do.

Alive! Who else was involved?

Keller: Well, us, the Mayor's office, the DWP, Building and Safety, our own Construction and Maintenance division. The fact is that we couldn't have gotten it done without them.

I'll tell you, the Mayor's office, frankly, was a pretty good partner on this thing because it was something they believed in, an initiative they wanted to see happen. The mayor actually signed those agreements when we went to Asia in 2002. They were with us all the way on this thing and wanted to see this happen. In some cases they helped us to work more closely with DWP. We couldn't have gotten it done without them. And when we talk about Building and Safety, for instance, we're talking about an unprecedented development here, we're talking about taking high voltage, putting it out on a steel barge, out over the water, manipulating and taking it back up, with unfamiliar technology and the like. Frankly, without that level of cooperation, we wouldn't be open today. It just couldn't happen, so this cooperation was really important.

Alive! What about the City Council?

Keller: Janice Hahn loved the idea, she's really pushed this thing. Tony Cardenas also has been a big proponent on this.

When we went [to Asia] in 2002, we had Alex Padilla and Eric Garcetti with us on the trip. I think we made some friends on this project! They went to the signing and understood what it was, so we had those folks with us. We had Tony Cardenas when we went back out to meet some of the customers, which brings us to the next big part of the story.

We went last January to Shanghai and Hong Kong. We went to visit Captain Li again, and the

idea other than thanking him was asking for his two ships [to be included in the project]. Tony [Cardenas] and the Mayor's office were there, and it was powerful. All the resistance we had in the room [from the shipping companies] on the first visit has dissipated.

Alive! We have heard that other ports are interested in this.

Keller: We believe so. We got an e-mail in here the other day from the head of the Amsterdam port in Holland. He was asking us for some details on how this works. All ports have the same issues, all ports are new big population centers because that's what they do, they serve a viable population. We had heard also, I think it was the mayor of Vancouver, Canada or Seattle, has expressed an interest in this.

Long Beach is looking at this now. The port of Long Beach has been asked by their board to try to make it happen over there. One of the huge advantages we have is that the DWP still owns its generation and continues adding adequate generation power. So if you're the City of Los Angeles, it's a whole lot easier than if you're Long Beach and you're dealing with Edison, which they don't control. The DWP might no longer export its excess. Now the power is going to be used here in the basin and it is going to be used beneficially because we are going to clean the air with it.

It's absolutely awesome. It's inspirational.

Alive! Are there different ways to build it?

Keller: We don't want to invent the Betamax [Sony's unsuccessful VCR standard] technology here and have it stranded out there. It would be terribly embarrassing to create [an inaccessible standard] with a major shipper as well, like China Shipping, where they take it from here and go to say Oakland or something like that and run into a different system and there's an incompatibility with it, that would be really tough.

But the one thing that no one can argue with is that, no matter how you are generating your power, you are going to generate it more cleanly at a plant than you'll ever do with a ship. You just can't clean up a ship's emissions enough, so this is a big deal and in the end when somebody says, gee, every time you plug in a ship you are creating a new cloud of smog over the Grand Canyon, well, that may be the case, but the fact is that it is cleaner smog than the stuff that would be com-

ing off that ship blowing out of the basin and going to the Grand Canyon.

Alive! Does the City of Los Angeles own patents on this, or are patents pending on any of this?

Keller: Yes, we have applied for a patent for the Port of Los Angeles, and also we have a trademark on the Alternative Maritime Power.

Alive! Who else was a part of this?

Keller: Well, Andrew Adelman [GM of Building and Safety] is probably one of the most far-sighted guys in the City. Andrew and his people are fantastic and they've always made themselves available to remove barriers to get things done.

I have to say our Board was entirely supportive, too. We've spent a lot of money on this one, and invention isn't cheap. But no one was disappointed when the first line went in!

Alive! This was the very first cargo ship to be hooked up?

Keller: This wasn't the first ship we hooked up. It was the second one. China Shipping didn't want any politicians, any press, on the first one because what if it didn't work? But it did work the first time. We learned a lot about hooking up plugs on the first and how to do it better, but it did work the first time. Following the ship you guys saw the other day,

two days later there was another one, which just kind of came and went. It hooked up and that ship had not been here before so you kind of go, does she have all the improvements, does she have all the enhancement, is it going to work? It did. This is exactly the right shipping company, exactly the right place and exactly the right team of our people to work this and get this thing running.

I heard Captain Li say the other day, "I'm going to give you another 10 or 12 AMP ships."

I mean it's just huge, just huge. You don't want to be the first to do anything, but once you are there, the folks are lining up at this point.

Alive! Do they have the same issues on the other side of the ocean?

Keller: There are not many clear days in Shanghai and it's not just because of weather, either. They

have this proliferation of industry and cars and stuff, and we think that they may be the first foreign port that we hook up for AMP. We are going share those technologies with them. We got the China Shipping vessels coming to and from Shanghai, and others will follow. We think it's going to be there. One of their questions is adequacy of power: Do they have enough power? A great deal of their power is generated with coal, and coal is an issue, but they have been working on mitigating that.

Alive! Is the hookup complicated?

Keller: It's relatively easy; the real problem is you have to make it efficient, too. The [current China Shipping boat in dock] that came in Friday was in for two days and she's gone, so nobody is going to spend a day hooking them up and taking them off.

Whatever happens next is going to be better. The main thing is to get started; you have to end the pushback, you have to end the resistance if you can, and you have to make it easy for people to say yes.

When they asked, "What are you willing to do for us?" I said, "Well, guys, do I have a deal for you. We are going to outfit your wharf, we are going to pay for the first ship and we're going to buy down the difference between diesel and electricity, so what's the downside?" There is no downside. If you don't like it, what's the worst that could happen? So they have signed up, NYK has signed up; we got the Evergreen guys here talking about maybe 10 brand new ships that will be laid down in the yard here within a year or so.

If we can get one ship at each terminal a week, the benefits, environmentally, would be huge. If we can get two, huger, three, hugest! Honestly, we're on our way. 100 percent is probably not achievable because there are charter vessels and people fall off schedule and they do this kind of stuff, but in an imperfect world, this is as close to a perfect solution as you can get, it's good stuff, really good stuff.

Alive! Thanks for telling us the story.

Keller: Thanks for giving us the opportunity to help tell it! This is a big story and this is something all of us can really be proud of. It has been done for the first time in Los Angeles, by Los Angeles City employees working with other Los Angeles City employees, who fell in love with the idea and dared to dream. And here it is.

It's not going to end here. These guys were wise to take out patents, but this is a technology that we will share with anybody in the world because the benefits are so huge. We have communities right here, we have communities over here, and I live downwind, so it matters. It really matters.

Alive! Thanks again, Mr. Keller.

Keller: Thank you.

Michelle Moreno, the Club's administrative assistant, contributed to this story.

Plugged In

■ The great AMP program at the Harbor ultimately requires real people to hook the ships up to the power. Here, an interview with the Electrical Shop.

An interview by John Hawkins, Club CEO, and Robert Larios, Club Operations Manager

The Electrical Shop from the Harbor Construction and Maintenance Division is headed by Club Board Member Joannie Mukai; the supervisor of the Electric Shop is Paul Steiner.

The shop is responsible for all 26 square miles of the Harbor electrical system and supplying power to the freight cranes, buildings, boats, docks, all lighting and now, for the first time in history, container ships. They work on anything between 24 volts to 6,600 volts.

Regarding AMP, their job is to get the cables to the container ship, secure them, and then cut in the power. They also shut down the power and remove the cables.

The photos show the Electrical Shop employees. It doesn't take all of these guys to connect the AMP cables; this is just the division that they'll draw from when a ship comes in.

Below is an interview with Barry O'Conner, Acting Senior Electrician, and Joe Foreman, Electrician. They are among the ones who literally plug the ships in.

Alive! What do you guys do?

O'Conner: We hook up the power to the ships.

Alive! What do you guys think personally about AMP?

O'Conner: We think it's great. It's great for the environment.

Foreman: We thought it was good for us because it's more work, more work for the electric shop, and the more work, the better. You know I mean it's part of job security, they need us here then, and that's what we like about the work. We love the work; the more work, the better for us.

Alive! And there's going to be more, I take it.

Foreman: Bring it all on. Down here is not just a regular electrician's job. We have to know the whole thing, just like Water and Power has to know high voltage. We have to do that, and we have to know the regular electrical as well.

O'Conner: Yeah, this is a unique place.

Foreman: This is a very unique place. We have it all, from high voltage to low voltage.

O'Conner: And we even work on boats!

Alive! What's the highest voltage?

O'Conner: The AMP project requires 6,600 volts. That's the highest.

Alive! So, from 12 volts to 6,600 and everything in between.

O'Conner: Yeah. For AMP, we actually go out and hook up the 6.6 kv cable, and then we lift up the cable using a crane on the barge up to the ship, so the ship's crew plugs the 440 plugs in on the barge.

Alive! You get the cables to the ship.

Foreman: Yeah, we get the cables to the ship.

O'Conner: When the chief engineer on the ship opens up his transfer switch, we then turn the power on. But when they shut the generator off, when they shut the generators down, we turn on the shore power.

Foreman: They go completely dark when they switch over [to shore power].

O'Conner: That's the way it's set up right now. In the future, they're going to have what they call a transfer switch on the ship where it's all automatic. As soon as they shut the generators off, it will switch over to shore power. Right now we have to do everything manually.

Alive! To us, all the departments pulling together is awesome.

Foreman: Yeah, working together as a team is great.

Alive! Thanks for your time.



Alternative Maritime Power wharf outlet at the port of Los Angeles.

AMP Honor Roll

Here are the names of many of the City employees who helped make this world-first innovation possible:

Harbor:

Project Manager Sal Zambrano
Marketing: Eric Caris
Electrical Section: Vahik Haddadian and Sirlord Morse
Port Inspectors: David Bickel and David Shieh

DWP:

Don Alecxih
Mark Holland
Horace Rupp

Building and Safety:

Mike Lee
Michael Dawson
Behzad Eghtesady
Simeon Rico

Electrical Shop from the Harbor Construction and Maintenance Division:

Paul Steiner, Supervisor of the Electrical Shop, Harbor Dept.



From left: Martin Lovato and George Jackson displaying the "flash suits" that must be worn when working with voltage greater than 600 volts, such as the AMP power. The flash suits protect them from possible explosion.



From left: Joseph Bulquerin, Electrician, 2 years; and David Higgins, Electrical Craft Helper, 15 years.



From left: Joseph Foreman, Electrician, 15 years; Martin Lovato, Electrician, 2 years; Salvador Gutierrez, Electrician, 2 years; James Henning, Electrician, 7 years; and José Aguirre, Electrical Craft Helper, 7 years.



From left: Azad Mkhitarian, Electrician, 8 years; Barry O'Conner, Electrician, 11 years; David Heersema, Electrician, 9 years; and James Meek, Electrician, 2 years.



From left: Javier Estrella, Electrician, 2 years; George Jackson, Electrician, 2 years; Richard Mattison, Electrician, 4 years; G.J. Virgil, Electrician, 3 years; and Marc Vidican, Electrical Craft Helper, 2 years.

