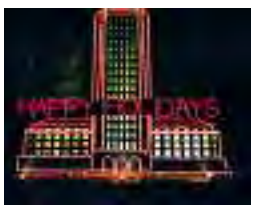
SERVING OVER 18,000 CITY AND DWP EMPLOYEES | Vol. 6 ■ No. 11 | November 2007 | City Employees Club of Los Angeles

Alive!

Color of DWP Light Festival: Especially Green

■ Dept.'s annual Light Festival in Griffith Park, which opens Nov. 20, goes environmentally friendly with LED lights, and biking and walking opportunities.

DWP — It was always green (and red), but now the annual DWP Holiday Light Festival in Griffith Park is going really green – as in environmentally friendly.



The popular annual Light Festival begins with a preview bike event Nov. 19, and "walking only" test week through Nov. 25. The festival opens to vehicles Monday, Nov. 26.

"The DWP received a number of inquiries from neighborhood councils and community groups to see if the festival could become more environmentally friendly and walking only," according to DWP spokeswoman Kim Hughes. "The DWP worked with the councils and groups in exploring options, and we are very proud to have put together a great strategy."

The festival again will be run on site by Anita Wright, Club Member, the first woman in the department's history to manage the event on site.

See the story inside on page 38.

Club Insurance Check Refund Totals $700,000

■ Club to give back $700,000 total to holders of Club Life Insurance. Do you have Club Life Insurance?

CLUB HEADQUARTERS — The Club will be returning approximately $700,000 in refunds to more than 8,500 holders of the Club's Life Insurance product.

What will you be doing with your refund? You'll get one if you have Club Life Insurance.

Members pay premiums each month. At the end of the year, money that is not paid in the administration of the claims is returned. This year, that totals approximately $700,000.

"That's among the largest amounts we have returned in our 79-year history," said Brian Trent, the Club's Chief Financial Officer. "Club Life Insurance promises to be there for those in need; that's our highest priority. But, after that, we love giving back anything we don't need."

Read the story on page 7 for details on the check disbursement, and how you can be eligible for next year's Club Life Insurance refund.

Power [TO THE] People

***Alive!* visits the DWP power plants and transfer stations and the men and women who staff them, following the electricity from generation into the grid. Here's where the power for your lights, computers and televisions starts. Included: an interview with DWP power chief Enrique Martinez on the department's green efforts, among other topics.**

Turn to the special section, beginning on page 10.

Joe Rosenthal, Electrical Station Operator, 21 years of service, at the McCullough Switching Station.

Roy Snyder, Chief of Operations, Adelanto Converter Station.

Mostafa Haji, Plant Engineer, 18 years of service, at the Harbor Generating Station.

Alex Gima, Environmental Coordinator, 28 years of service, at the Haynes Generating Station.

Alive! staff photos by Angel Gomez and John Burnes

City Employees Club of Los Angeles
350 S. Figueroa St., Suite 700
Los Angeles, CA 90071

CHANGE SERVICE REQUESTED

PRSRT STD
US POSTAGE
PAID
Permit #30391
Los Angeles, CA

ClubFest photos!

Are all inside and more on the Web!.

include website.

See pages 62-67.

DWP EMPLOYEES AT WORK

Power

Power Facts:

DWP Power Service facts at a glance

Power Sources (for fiscal year 2004-05)

Coal:	52 percent
Natural Gas:	26 percent
Large Hydroelectric:	6 percent
Nuclear:	11 percent
Renewables:	5 percent

Electrical Capacity

Total Generating Capacity:	7,200 megawatts
Los Angeles Peak Demand:	6,165 megawatts

Electricity Usage (annual)

Residential:	7,055,990	megawatt-hours (31 percent)
Commercial:	13,223,405	megawatt-hours (58 percent)
Industrial:	2,447,499	megawatt-hours (10 percent)
Other:	138,103	megawatt-hours (1 percent)

Other Power Facts

Total Power Poles:	290,000
Miles of Transmission Lines:	3,643
Miles of Overhead Distribution Lines in L.A. Area:	7,268
Miles of Underground Distribution Lines in L.A. Area:	6,115
Total Street Lights in L.A.:	258,000

Measurement Guide

Watt:	Unit of measurement of electrical power
Kilowatt-hour:	1,000 watts of power at work for one hour, or a 100-watt light bulb operating for 10 hours
Megawatt-hour:	1,000 kilowatt-hours
Gigawatt-hour:	One million kilowatt-hours

Thanks

Alive! wishes to thank the following DWP employees, without whom we couldn't have produced this feature:

Enrique Martinez
MaryAnne Pierson
Chris Plakos
Gwen Lew
Roy Snyder
Leroy Earl Beatty
Leonard Reed
Anthony Juarez
Alex Gima
Mostafa Haji
Rolando De Vera
William Youngquist
Henry Hopkinson
Richard Jimenez
Stan Seymore
Dave Tsosie
Joe Rosenthal

[TO THE] People

Last February, *Alive!* focused on the water that supplies the City by following the DWP's Los Angeles Aqueduct from Lee Vining to Sylmar.

And now comes part two, as *Alive!* looks at the DWP's equally critical power side, visiting the department's staffed power generation and transfer stations from Boulder City to Long Beach.

Come along and meet some of the people along the City's electricity grid who generate and bring you the service that powers your life.

Valley Generating Station photo courtesy DWP

Power [[to the]] People

The *Alive!* Interview

Energy Now and in the Future

■ *Alive!* interviews Enrique Martinez, Chief Operating Officer, Power System, for the Department of Water and Power, about how the department generates the power you use, its emergency situations, and its green future.

DWP — On Sept. 7, *Alive!* CEO John Hawkins interviewed the head of the DWP Power System, Enrique Martinez, about the heat wave the City had just endured, the broad view of the power system, and department's efforts at green power generation.

Alive!: Thanks so much for meeting with Alive!

ENRIQUE MARTINEZ: Sure.

Alive!: One of the most important things is to give the reader a broad overview of the power system. I think a lot of people have misconceptions about where we get our power. Where does it come from?

ENRIQUE: Okay. Well, first of all, we measure the capacity of the system, the size of the system, by megawatts. A megawatt is a million watts of power. The Department of Water and Power has more than 7,000 megawatts of its full capacity, which means two things: one, we are one of the largest utility in the nation based on that indicator; and two, we are the largest municipality in the United States.

We also have 1.4 million meters on the power system, which represent the individual homes, residences and apartments that we serve at all times with that full capacity. That's about 10 percent of the full capacity of the State of California. Our transmission lines are throughout the West. They are not just in the City and the state. They are out of state, too.

Alive!: And you own those lines.

ENRIQUE: We own those lines.

Alive!: But maybe not the source.

ENRIQUE: In most cases we own the source, and also we own the transmission. And then, of course, we own the distribution within the City of Los Angeles. So we are considered a vertically integrated utility. That means we own generation. We own transmission. We own distribution, and we serve the customers directly. So that, in the big picture, is what the Department does and has at present.

Coal Power

Alive!: Please give us a broad overview of where all this energy and electricity comes from.

ENRIQUE: Sure. A good quantity of the power comes from out of state. We invested many, many millions of dollars, billions of dollars, with out-of-state facilities. One comes out of Utah, where we are part of the Intermountain Power Project. We also own Navajo, which is near Page, Ariz. It is a facility on the Navajo Reservation.

Alive!: Intermountain is a generating facility?

ENRIQUE: It is a generating facility. It has two large coal units up there. 47 percent of the energy that we provide for the City today comes from coal generation.

Alive!: Where does the coal come from?

ENRIQUE: Mines. In Utah, we buy from mines.

Alive!: And Navajo is coal.

ENRIQUE: Correct.

So we have those facilities. And we still own part of Mojave, in Laughlin, Nev. And that is a coal ownership. The plant is shut down since the end of 2005, and the owners are trying to figure out what to do. There are three other owners along with us.

Natural Gas Power

ENRIQUE: So then we go to natural gas. In the L.A. basin, we own four natural gas facilities. They are Haynes, near Seal Beach and Long Beach; the Harbor Generating Station, by the Port of Los Angeles; Scattergood, next to Hyperion Treatment Plant; and the Valley Generating Station, in Sun Valley. So those four provide our gas-fired generation.

Alive!: Where does the natural gas come from?

ENRIQUE: We buy natural gas on the spot market. Also, we have bought a position in reserves in Wyoming, where the Department has bought actual gas fields.

Alive!: Really.

ENRIQUE: And we are moving gas. It is being produced from Wyoming all the way down to Los Angeles using pipelines. It is withdrawn from the field in Wyoming, in Pinedale. It goes through a process to make it pipeline-quality before it is injected into what they call the Kern River Pipeline. Kern River Pipeline runs all the way from Wyoming to the California border. And then at the California border, it gets transported to the Southern California gas company system. And then from the gas system it comes to our plants.

Alive!: Wow.

ENRIQUE: So we bring gas as far as Wyoming. We can bring it from as far as Texas.

The pipes are mostly underground.

Also, we buy gas from the market. We have short contracts with producers. Then we manage it. Install it. And then use it for our system.

— continued, page 14

ABOUT

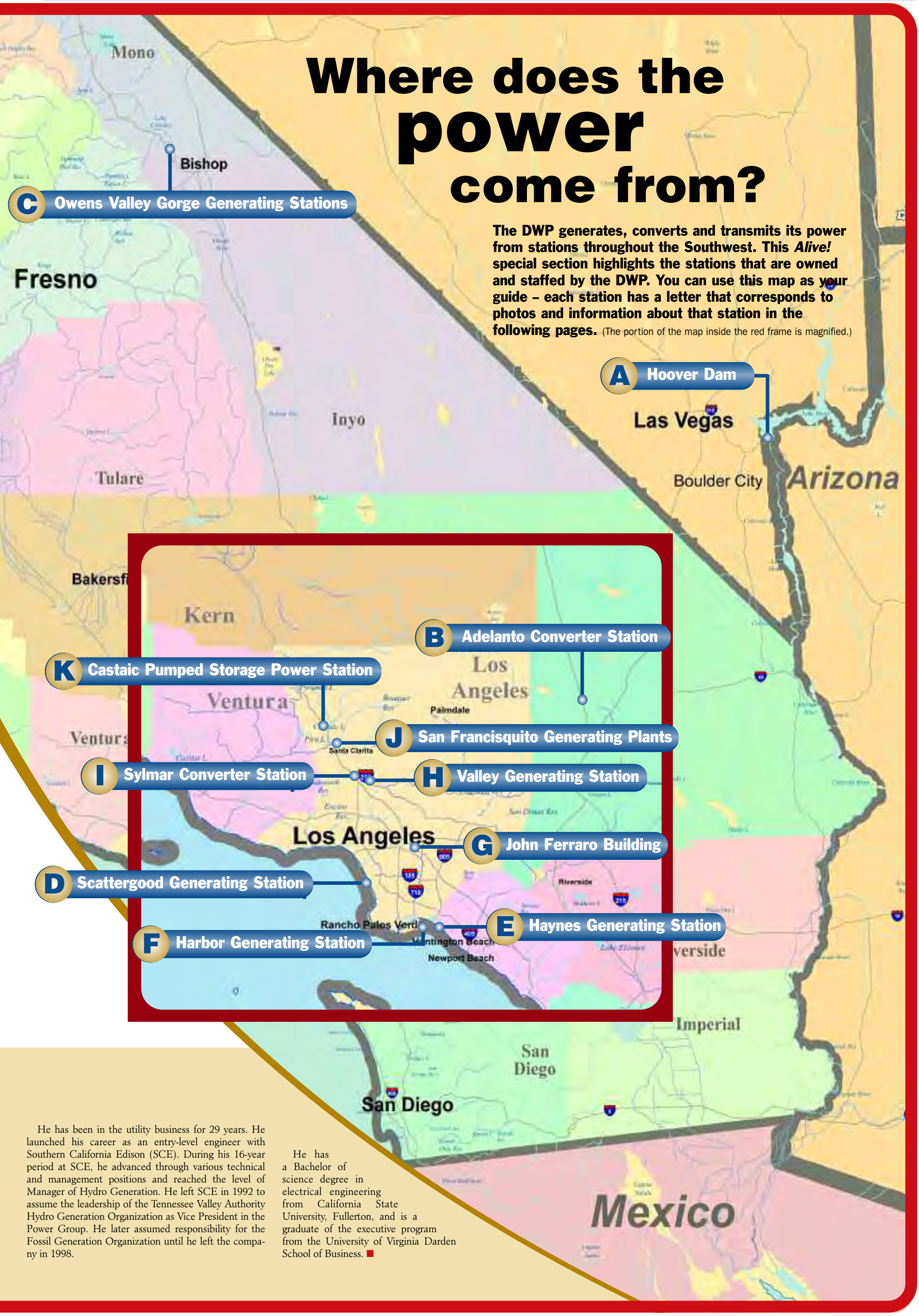
Enrique Martinez

Chief Operating Officer, Power System
Los Angeles Department of Water and Power

Enrique Martinez has worked for the DWP since 1998. He held the position of Director of Generation until his appointment in April 2000 to Assistant General Manager - Power Services. His responsibilities included generation, transmission, energy procurement, wholesale marketing, fiber optics and distribution. In June 2002, he was appointed Assistant General Manager of Power Generation, which included planning, construction, and operation of the major generation and transmission facilities including energy procurement and wholesale marketing. In September 2003, he was appointed Chief Operating Officer - Power System, and is responsible for all power assets, environmental affairs, regulatory affairs and economic development programs.

Where does the power come from?

The DWP generates, converts and transmits its power from stations throughout the Southwest. This *Alive!* special section highlights the stations that are owned and staffed by the DWP. You can use this map as your guide – each station has a letter that corresponds to photos and information about that station in the following pages. (The portion of the map inside the red frame is magnified.)



He has been in the utility business for 29 years. He launched his career as an entry-level engineer with Southern California Edison (SCE). During his 16-year period at SCE, he advanced through various technical and management positions and reached the level of Manager of Hydro Generation. He left SCE in 1992 to assume the leadership of the Tennessee Valley Authority Hydro Generation Organization as Vice President in the Power Group. He later assumed responsibility for the Fossil Generation Organization until he left the company in 1998.

He has a Bachelor of science degree in electrical engineering from California State University, Fullerton, and is a graduate of the executive program from the University of Virginia Darden School of Business. ■

[Power [[to the]] People]

The *Alive!* Interview

— *continued, from page 12*

Water Power

Alive!: So there is coal, natural gas and hydroelectric, too.

ENRIQUE: Right. Yes. In terms of hydroelectric, the biggest component is our allocation from Hoover Dam. Many years ago, the Department was one of the first investors to make building the dam possible.

Alive!: We invested in that?

ENRIQUE: Yes. We had a compound where employees lived in Boulder City during construction and up to 1983. We had Department personnel who lived in Boulder and worked at Hoover Dam, operating our units. Following 1983, the [Federal] Bureau of Reclamation took ownership back basically, because we had a 50-year-license when Hoover Dam was built. So they took the option to take it back, and now the dam is operated by the federal government. Most of the facilities were sold at that point. The homes and everything we had back there were also sold to the employees in most cases. Many of the employees stayed with the Bureau of Reclamation.

Alive!: So they switched jobs?

ENRIQUE: Basically, yes. But we retained the allocation of the power coming out of Hoover Dam. And it is about 380 megawatts coming out of there.

Alive!: And there are other hydroelectric plants, too, right?

ENRIQUE: Right. We also have hydroelectric along the LA Aqueduct, all the way from Owens Valley. There are power plants all the way down. Everything is driving flow. There are no pumping stations to get the water down from the Owens Valley. They built small power plants to provide power for [aqueduct] construction. After the construction, they stayed to provide power. So we have hydro facilities there, the Upper Gorge, the Middle Gorge and the Control Gorge. And we have power plants down farther, too. There is a large plant in the San Francisquito Canyon. That is at the confluence of a lot of water coming through the Aqueduct. There is a lot of water there, so they put a larger power plant there.

Alive!: But Hoover Dam is the biggest?

ENRIQUE: That is the biggest.

Alive!: And the most recognizable?

ENRIQUE: Right.

Alive!: What about Castaic?

ENRIQUE: Castaic is the pump storage. It is hydro, but a little different type of hydro.

Alive!: Explain that...

ENRIQUE: Well, during the day, water is released from the Upper Reservoir, which is Pyramid Lake. It comes down to Castaic and generates power. In the evening, when the demand goes down in the City for power, we reverse the pumps. We pump the water back up and store it for the following day. It's kind of like a recycling process. We don't necessarily get more kilowatt-hours out of it. But you bring in the kilowatt-hours to [generate] more expensive power when you need it. And because you can put that energy into the system so quickly, it becomes a very good way to meet the peak demand. We use surplus power in the evening to pump the water back up, and then [generate] more expensive power during the day.

Alive!: And there is only one of those?

ENRIQUE: One in the Department, yes. It generates 1600 megawatts, which is a large facility. And it's used pretty much every day. We have to work with the Department of Water Resources. They schedule the water that has to be released into the L.A. area. They have to maintain the pumping at Evanston, coming over the Grapevine.

Alive!: Sounds complicated...

ENRIQUE: It is, yes. There is always concern in the scheduling process between the water system, the California Water Resources, and us, to make those schedules come about.

Nuclear Power

Alive!: How about nuclear power? Doesn't something like 11 percent of our power come from nuclear sources?

ENRIQUE: About 10 percent, yes.

Alive!: Does that come from San Onofre?

ENRIQUE: No, no. That comes out of Palo Verde, 50 miles west of Phoenix. We own 10 percent of capacity at Palo Verde, 10 percent of the nuclear plant.

Palo Verde has six owners: us, Southern California Edison, Salt River Project in Arizona, Arizona Public Service, El Paso Electric, and Tucson.

Alive!: Do we literally get electricity from that plant?

ENRIQUE: Yes. It comes from the switchyard for the power plant. We have a transmission line connected to its switchyard that brings the power all the way to Palm Springs. And then from there it goes to Victorville, and from Victorville it's distributed across the City.

Green Power

Alive!: And finally, renewable energy.

ENRIQUE: We have an internal goal, directed by the board and the mayor, to achieve 20 percent of our retail sales from eligible renewable energy by 2010. So we are aggressively pursuing large quantities of renewable energy. We are going to buy some; we are going to build some. And then we are going to have somebody else build them and we will buy it.

Alive!: What are you building?

ENRIQUE: We will be building a 120-megawatt wind farm. We have the turbines. We just completed a land negotiation for the leases of the land where it is going to go in.

Alive!: Where?

ENRIQUE: Tehachapi. Actually, it will be north of Mojave on 395, on the way to Bishop, about 14 miles north of the town of Mojave.

Alive!: And that is property we already own?

ENRIQUE: No, it's privately owned, but we negotiated long-term leases with the owners for the site and use the facility. We are also pursuing purchasing additional land around that area. The wind potential is pretty good in that area. We have transmission lines there, so we are trying to find a way to increase the capacity for that region there so we can bring more of that power to the City.

Alive!: So what would be, 10 years from now, the most popular form of renewable energy?

ENRIQUE: Well, I think it will be wind primarily. But we are also going to bring other technology into the picture. We are definitely pursuing geothermal. We are working with the Imperial Irrigation District in the Salton Sea area, for co-development of geothermal down there. The Department has purchased some land with geothermal potential in the Imperial Valley, which we plan to develop as well.

Alive!: Geothermal means heat in the earth.

ENRIQUE: In the earth. Correct.

Alive!: How do you create energy?

ENRIQUE: You drill wells into the earth, and you collect that heat, or what we call plasma. It depends on the type. But you bring heat from the earth and you process it through a heat exchanger, where you then make the exchange in the full system to make steam inside the turbine. Then you get this power.

Alive!: So it is hot enough to make steam?

ENRIQUE: Oh, yes. Yes.

Alive!: Like a nuclear reactor without the radiation.

ENRIQUE: Correct. The fields are somewhere in the neighborhood of 340 to 380 degrees. So it is not what we call superheated, but it is hot enough to generate and get enough energy out of that source so we can run turbines. What makes it clean is that there are no emissions. Once the steam has expanded, it is re-injected back into the earth so that the cycle continues to feed itself.

Alive!: What about photovoltaic?

ENRIQUE: The Department has a very aggressive plan for adding photovoltaic. It is a long process because every installation is so small.

The way that we are using to try to get people to invest money into photovoltaic is by providing rebates. But the rebates unfortunately are not large enough to offset the cost of the investment. And then, because our rates are so low and the payback period is so long, that it kind of works against itself. We just adjusted and submitted to the board for consideration a revision of the rate of the rebate structure, to make it more attractive.

Green Challenges

Alive!: What prevents us from doing building photovoltaic cells in the desert?

ENRIQUE: Cost. It is very expensive. The most efficient way to collect solar power is called a concentrated solar system. Concentrated solar means fields and fields of troughs of mirrors that are concave with a conductor, or some kind of a pipeline through the center of the conductor. The parabolic mirror tracks the sun from the morning to the evening, and then reflect it into one single point at the apex of the parabolic dish. That is where the heat is concentrated, and the heat transfer occurs at that point. The fluid runs through that pipe, all the way back to a heat exchanger. That is where the steam is created and then runs a turbine. We have been looking at that type of [system], but more cost effective, more controllable. You are limited to smaller quantities because it takes a lot of area to produce one kilowatt of energy.

Alive!: And it is DC to AC.

ENRIQUE: DC to AC. You have the conversion issue. You have other problems, so it is very inefficient.

Alive!: You have to convert it to AC to transmit it.

ENRIQUE: Yes. In that conversion, you lose energy. And so by the time you add all these things, possibly solar is much more effective and efficient than is photovoltaic.

Alive!: Does DWP own any [photovoltaic] projects?

ENRIQUE: No. About three projects have been proposed. We are evaluating those right now actively and probably we will see one, maybe two in the next 10 years.

Alive!: The people who work on this, are they DWP employees? Is there a renewable energy division?

ENRIQUE: We are starting that. Up to now, we do not own renewables. Our first major installation on renewables will be the wind farm. And we are looking right now at staffing and looking at the profile of the kind of work that they have to perform. We are finding that one of the physical requirements of these jobs is that employees will have to climb 300 feet up in the air and perform work at those elevations.

Alive!: Three hundred feet.

ENRIQUE: Three hundred feet in the air. That is where the turbines are.

Alive!: On the wind farm?

ENRIQUE: The wind farms, yes. The actual turbines will be sitting 300 feet up in the air. It is pretty mountainous where we are going to be installing our turbines. Palm Springs is fairly flat. We have identified that our people will have to climb up daily and then also be able to safely rappel over the side and come down in an emergency. They would be harnessed and all

— *continued, page 16*

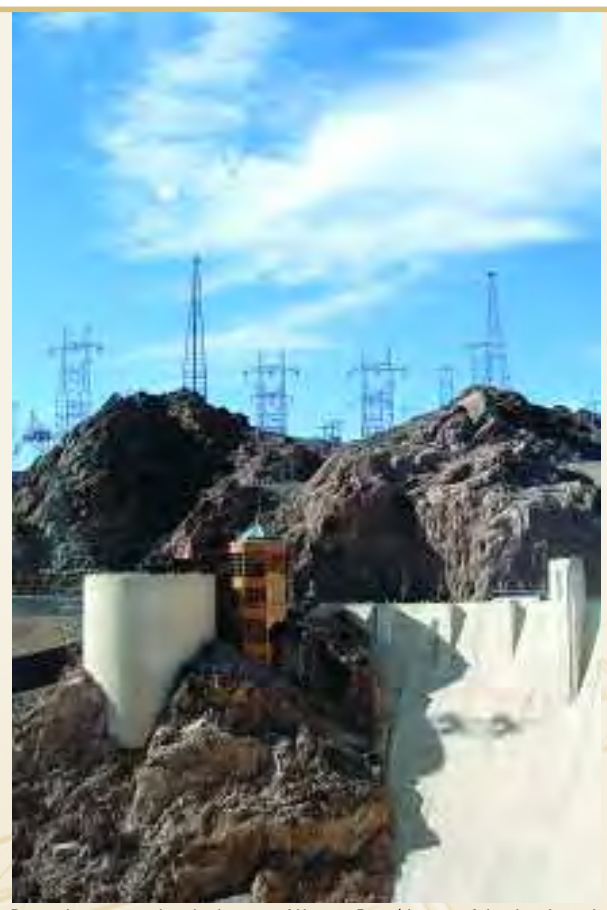
THE FACTS

Hoover Dam

Marketplace Transfer Station and McCullough Switching Station

Location:	Boulder City, Nev.
Hoover Dam operational:	1936
Type of power (generated):	Hydroelectric
Type of power (transferred):	Hydroelectric, coal
Purpose:	Convert power from DC to AC for long-distance transmission; transfer power from Hoover Dam, the Utah generating stations and Edison to where needed, including the City of Los Angeles
Generating capacity (Hoover Dam):	491 megawatts (DWP portion)

A Hoover Dam



Power is generated at the bottom of Hoover Dam (the top of the dam is at right) and transferred over the cliffs via power lines to the McCullough Switching Station and the Marketplace Transfer Station.

Marketplace Transfer Station

Performing a remote terminal upgrade at Marketplace are, from left: Mike Able, Electrical Mechanic; Al Derlighter, Electrical Mechanic Supervisor; Walter Johnson, Electrical Mechanic, Alfredo Cardenas, Electrical Craft Helper; and Vic Aceves, Electrical Mechanic.

At the controls at McCullough is Bob Wasdorp, Electrical Station Operator, 32 years.

We thought this photo was of a DWP plant, but it's actually an Edison plant. So we'll need to use another photo.

Richard "Mack" De Motte, Electrical Mechanic, 6 years of service.

Danny Jurn, Equipment Operator, 27 years.

McCullough Switching Station

Joe Rosenthal, Electrical Station Operator, 21 years of service, at the McCullough Switching Station.

The McCullough Switching Station, south of Boulder City, gathers power from a number of sources and sends it where it's needed. Inset: Larry Jurn, Electrical Mechanic, is in the "bucket," installing a new transformer.

[Power ([to the]) People]

The *Alive!* Interview

— *continued, from page 14*

that, of course. It is one thing doing it on the ground level. It is another thing doing that at that level.

Alive!: Do you think we are at an advantage as opposed to other municipalities or power users in the United States in that we have wind, heat and many sunny days? Whereas, maybe back East or in the Midwest there might not be as much of that?

ENRIQUE: That is true. The resources here on the West Coast are more plentiful. They facilitate that type of technology. If you go to other places it is more difficult to develop them because it just impedes itself. They do not have the weather and terrain to be able to make that happen. So, yes, I think there is a lot of potential to tap.

I think our biggest challenge is that we are moving from what we did in the past, from very large, large projects, to a whole bunch of little ones. They have to be built. They have to be maintained. They are going to have to be commissioned and permitted. And then, of course, transmission lines have to be built. When you are working on a large project, there is a lot of focus and concentration, and a lot of resources pour in. But once it is done, it is done, and it is pretty predictable. When you start multiplying that in a number of different foreign projects, your risk level goes up.

Alive!: Right. Eighty turbines instead of one.

ENRIQUE: Yes. Or one large boiler. So, yes, it becomes a little more challenging and more labor-intensive to maintain a new system. But the trade-off, of course, is that they are cleaner. They are very clean. It does help the atmospheric conditions. It addresses the global warming problem. It addresses a number of other issues of technology development. And, ultimately, over time, these may be the beginning of a nexus of new technology that will be evolving, because the issue of combustion in general, whether it be automobiles or diesel engines or power plants or cement plants … it is becoming more and more of a challenge to keep combustion as the mainstream way we produce any kind of energy for anybody in this country. There has to be some departure, some way to find alternatives. And it is not going to be cheap. This is one of the issues. It is not going to be a cheap way to go, but ultimately for the long-term issues of the economy and of the citizens and humans, something has to change.

And I am really concerned. This last two years we have had some unusual weather. We have been talking in the Department about how we used to predict pretty much where [energy demand was] going to be, and how the weather was going to behave, and make our plans somewhat systematically. We have so much history as to how patterns develop. And right now we are in a really strange pattern that we cannot predict one way or the other which way it is going to go.

Alive!: But it's gone out the window?

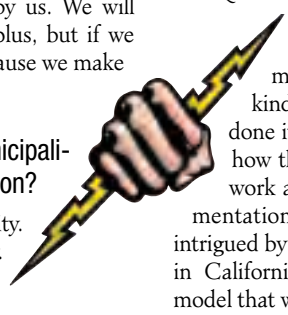
ENRIQUE: That has kind of gone out the window, yes. Last year, there was so much demand driven by a long duration of [high] temperature that tasks our system. The demand was driven to levels we did not anticipate until 2011 or 2012. We are going back to the drawing board right now and try to figure out, okay, what have we got to do? We cannot be in a position where the City is jeopardized and they cannot have reliable power. Having customers [lose power] or days upon days without energy and hot days, is just not sustainable and it is not something that the City wants to have. The Department, frankly, doesn't want to explain why customers are without service for long durations.

Selling Power

Alive!: Does anyone buy power from us?

ENRIQUE: Yes. We sell surplus power to the market when it is not needed by us. We will make it available when it is surplus, but if we need it we always call it back because we make sure that the City is served first.

Alive!: Can buyers be a municipality? Can it be another corporation?



ENRIQUE: Yes. It could be a utility. It could be an out-of-state utility. It could be a marketer. Our issue is not necessarily who we sell it to. Our issue is to make sure that the financing is viable, that they can pay us when we sell that power because we do not want to extend credit to companies that do not have a lot of credit.

So, yes, we do sell surplus energy. It is not a big component of our business, but it is one. We also buy from the system. Sometimes the market is such that there is a lot of excess power. Maybe it was anticipated to be real hot, but it never got real hot. And all of a sudden you are flooded with a lot of energy out there. When that happens, we can go into the market and say, well, we will buy that excess energy. And then we will use it at Castaic for pumping, or we will shut down one of our fossil units to displace that energy.

Alive!: Fossil meaning?

Enrique Martinez, Chief Operating Officer, Power System, DWP, explains a point to Club CEO John Hawkins.

ENRIQUE: Gas or coal.

Alive!: Fossil fuels.

ENRIQUE: Yes. Wee manage that. There is an active management system of all the infrastructure, all the options, both internal and external. And then also we look at the best way to shape the portfolio going forward to bring us the most reliability and the lowest cost to the consumer.

Coming Back to California

Alive!: You worked for Southern California Edison for how many years?

ENRIQUE: Sixteen.

Alive!: Sixteen years. And then -- I am no expert in your field, but it would seem to me you went to the best, which is then the Tennessee Valley Authority.

ENRIQUE: Right. Six years there.

Alive!: To me that would be the crowning achievement. So how do you go from the Tennessee Valley Authority – the best, and maybe the top -- back to LA?

ENRIQUE: When I came back to California, it was right at deregulation. There were new models being implemented in California that were really kind of out of the box. Nobody had done it. Everyone was trying to figure out how this whole new system was going to work and it was a great period of experimentation in the power industry. I was intrigued by how these things are going to work in California. Back in Tennessee, we had a model that was very robust. It had been proven. It had been shot at many, many times, and the model – public and private partnership -- worked well. I would not say it was on automatic mode, but in essence there were not a lot of variances you could actually go into and perform.

Well, here in California, it was just the opposite. So when the opportunity came about to come out here and come back to L.A. and be in the middle of this great experiment that was going on, I took it. I grew quickly in three years, just being in on the ground floor of this great experiment in California. I never would have been exposed to that or would have been really had an opportunity to learn. I started not only to understand but manage a system in this very turbulent world. Still today I am still learning more, and it gave me a good foundation to deal with how to protect the Department going forward and stay out of these morasses that happened in earlier times, to not repeat it. That's our challenge right now with term limits. Legislators now are novice in what they come into. They are trying to make decisions or pass laws on issues that they have no history and no background, and that becomes a challenging element. We have to become more of an instructor teaching and explaining why certain things will not work.

Big Responsibilities

Alive!: Do you ever think about the responsibility that you have? Is it a duty? Is it an honor, a responsibility? The happiness and the lives of so many people are based upon what you do. Do you ever think about that awesome responsibility you have?

ENRIQUE: Well, yes, at times. Sometimes the reality hits you, like it did this last weekend when we had extreme weather. And you get reports of the number of outages and the people who are affected. You roll the crews out. You call people out. Trying to manage my staff and all of the ins and outs of what needs to happen physically to restart power and get people served. To me, that is when it really hits me -- the size and the magnitude of the system that I am responsible for. But also how good the staff is in responding. I was really proud of the guys through this last outage. The hot weather came faster than we thought. The crews started getting ready for it. And as things continued to change throughout the day, they kept adjusting systems, whether it be at the distribution level or generation or transmission, or going to the market, to make sure everything came together without a step missing in the process. We did not stumble. We did not fall.

Things kept running, and then the third day hit, and obviously the pressure got worse. And we had to make some calls -- what do we have to do to get the power systems back up again to the customers? We had a long weekend [Labor Day], so that made it more difficult.

All in all, to me, it is a challenge. I do not think about it too much until these events happen. And that is when the tire meets the road.

Alive!: It becomes personal to you.

ENRIQUE: Yes. It's a reflection of the customers' confidence in the Department. And that reflects all the way from the General Manager to every employee in the Department. I was reading in the paper where customers were glad to see the crews. It was almost like a cowboy was riding out to the rescue, and the guys feel proud about that. They really do. There is a lot of pride. That is when they shine the best, when things are going bad.

It becomes very personal to all of us. As professionals and individuals, we pride ourselves in managing the system and doing it well.

Alive!: What makes you happy about the job?

ENRIQUE: The challenge. It is so diverse. The system is large enough, and so diverse, that we find different type of challenges every day, whether it be administrative, legislative, strategic or operational. For me personally, the diversity of issues that come up and the opportunities that I have to participate in day to day, keeps the job very exciting. That's number one.

And number two, it is never boring. There is always something to deal with. And my job is broad enough that I can talk about technical items down to the detail on relay systems and small transformers. And then deal with policy issues. And with global warming and strategies on how to invest additional funds or monies in projects that will change the whole nature of the Department. The broad range of issues and opportunities that I have is what keeps this job pretty exciting for me.

Alive!: Thank you for your time today.

ENRIQUE: You're welcome. ■

THE FACTS

Adelanto Converter Station

Location:	Adelanto
The southern terminus of the Intermountain Power Project (Utah).	
Operational:	1986.
Purpose:	Convert power from DC (sent from the coal-burning generators in Utah) to AC; and transfer that power to DWP stations in Victorville, Boulder City and the Valley.

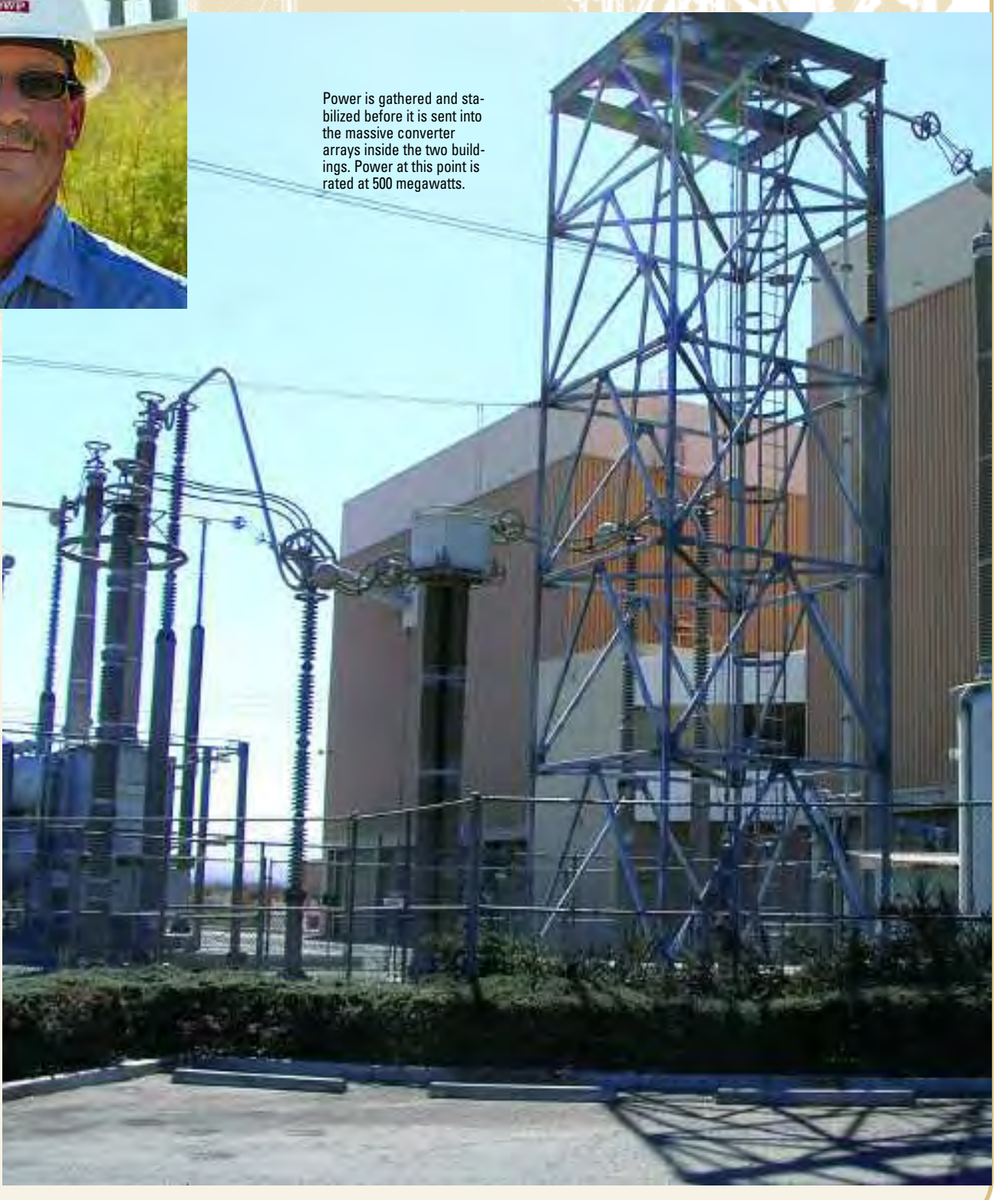
Adelanto Converter Station

The Adelanto Converter Station in Adelanto, near Victorville. A microwave tower soars above it.

Roy Snyder, Chief of Operations, Adelanto Converter Station.

At the controls in Adelanto, from left: Donald Rowland, Second Operator, 25 years of service, and John Clark, First Operator, 25 years of service.

Sandra Crassweller, Sr. Storekeeper, 18 years of service.



Power is gathered and stabilized before it is sent into the massive converter arrays inside the two buildings. Power at this point is rated at 500 megawatts.

Power [[to the]] People

Owens Valley Gorge Generating Stations

THE FACTS

Owens Valley Gorge Generating Stations:

Upper Gorge

Middle Gorge

Control [Lower] Gorge

Location:	North of Bishop, Calif.
Operational:	1952 and thereafter. (Three much smaller power plants were built in the Owens Valley in 1908 and 1909 to power the construction of the first Los Angeles Aqueduct.)
Type of power:	Hydroelectric
Generating capacity:	110 megawatts

Control Gorge just north of Bishop controls all three Gorge stations and is the only one that is permanently staffed.

Control [Lower] Gorge

Power is collected from all three Gorge stations, sent through these transformers and transferred to Los Angeles. These transformers are almost brand new.

Water from the Los Angeles Aqueduct enters the Control Gorge Station via this penstock and valve. Standing next to it is Jeff Husted, Chief Electric Plant Operator.

At the control panel at Control Gorge are, from left: Forrest Bell, Electric Station Operator; Jeff Husted, Chief Electric Plant Operator; and Mike Robertson, Electric Station Operator.

Installing a new transformer at Upper Gorge is Will Johnson, Electrical Mechanic, 1 year.

Upper Gorge

An Energy Dissipation Structure (EDS) was installed at Upper Gorge in the early 1990s to take some water from the Los Angeles Aqueduct as it came down the gorge from Crowley Lake and re-water the Owens River Gorge (above).

Middle Gorge

Middle Gorge Generating Station is not staffed.

Adjusting the sag of newly installed power lines (the originals were destroyed during the brush fires of July 4) near Independence are (front row, from left) Phil Monteforte, Electrical Distribution Mechanic Trainee; Joel Vega, Electrical Distribution Mechanic Trainee; and Mario Miranda, Electrical Distribution Mechanic Trainee. Standing: Phil Vega, Electrical Distribution Mechanic Trainee; Ben Rodriguez, Electrical Distribution Mechanic Trainee; Dave Flynn, Electrical Distribution Mechanic; Charlie Reagan, Electrical Distribution Mechanic Trainee; Mike Conley, Foreman; and Mike Cruise, Electrical Distribution Mechanic.

Power [[to the]] People

Scattergood Generating Station

Dave Tsosie, Scattergood operator.

THE FACTS

Scattergood Generating Station

Location:	Playa del Rey
Operational:	1959
Type of power:	Natural gas
Generating capacity:	813 megawatts

Dave Tsosie stands in front of filtering unit.

Control room for the generating station.

Another control room for the generating station.

Alex Gima, Environmental Coordinator, 28 years of service.

Haynes Generating Station

FACTS

Haynes Generating Station

Location:	Long Beach
Operational:	1963, re-powered in 2005
Type of power:	Natural gas
Generating capacity:	1565 megawatts

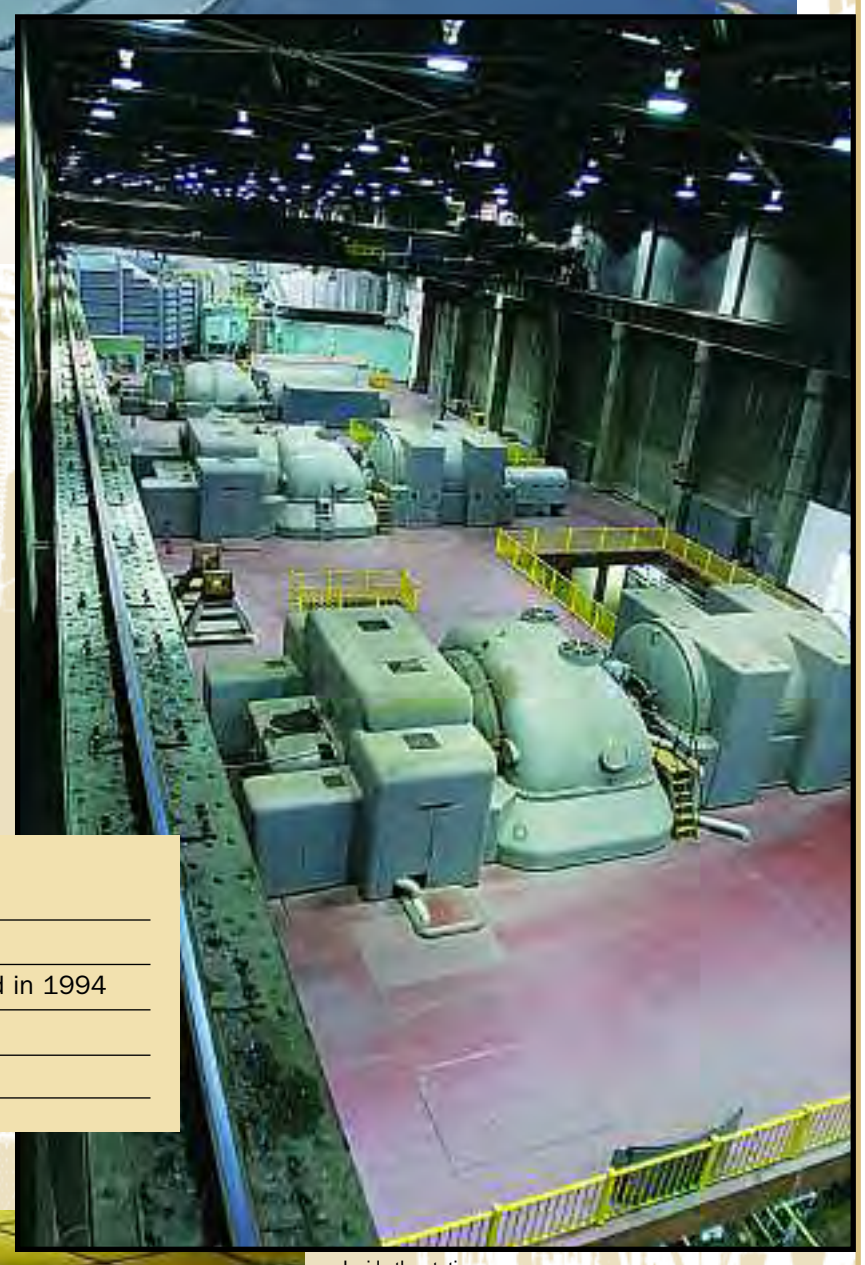
View from top of Haynes Generating Station.

Generating Station landscape from the front of the plant.

Power [[to the]] People

Mostafa Haji, Plant Engineer, 18 years of service, at the Harbor Generating Station.

Harbor Generating Station



Inside the station.

FACTS

Harbor Generating Station

Location:	Wilmington
Operational:	1962, re-powered in 1994
Type of power:	Natural gas
Generating capacity:	466 megawatts

The Operator Control Room.

Mostafa Haji, Plant Engineer, 18 years of service, at the Harbor Generating Station.

Fuel Cell Power Plant

FACTS

John Ferraro Building Fuel Cell Power Plant

Location:	Downtown Los Angeles
Operational:	2003
Fact:	The world's largest, most efficient commercial design fuel cell power plant. Produces nearly zero emissions and pollutants.
Type of power:	Hydrogen
Generating capacity:	250 kilowatts

The fuel cell at the John Ferraro Office Building.

John Ferraro Building

Solar Power Plant


Solar arrays at the John Ferraro Office Building.


The other set of solar arrays that the city operates is at the Convention Center.

FACTS

John Ferraro Building Solar Power Plant

Location:	Downtown Los Angeles
Operational:	1999
Type of power:	Solar
Generating capacity:	150 kilowatts
Purpose:	Built as a pilot project to encourage use of solar arrays. Provides about five percent of the DWP headquarters' energy needs.

Power ([to the]) People

Valley Generating Station

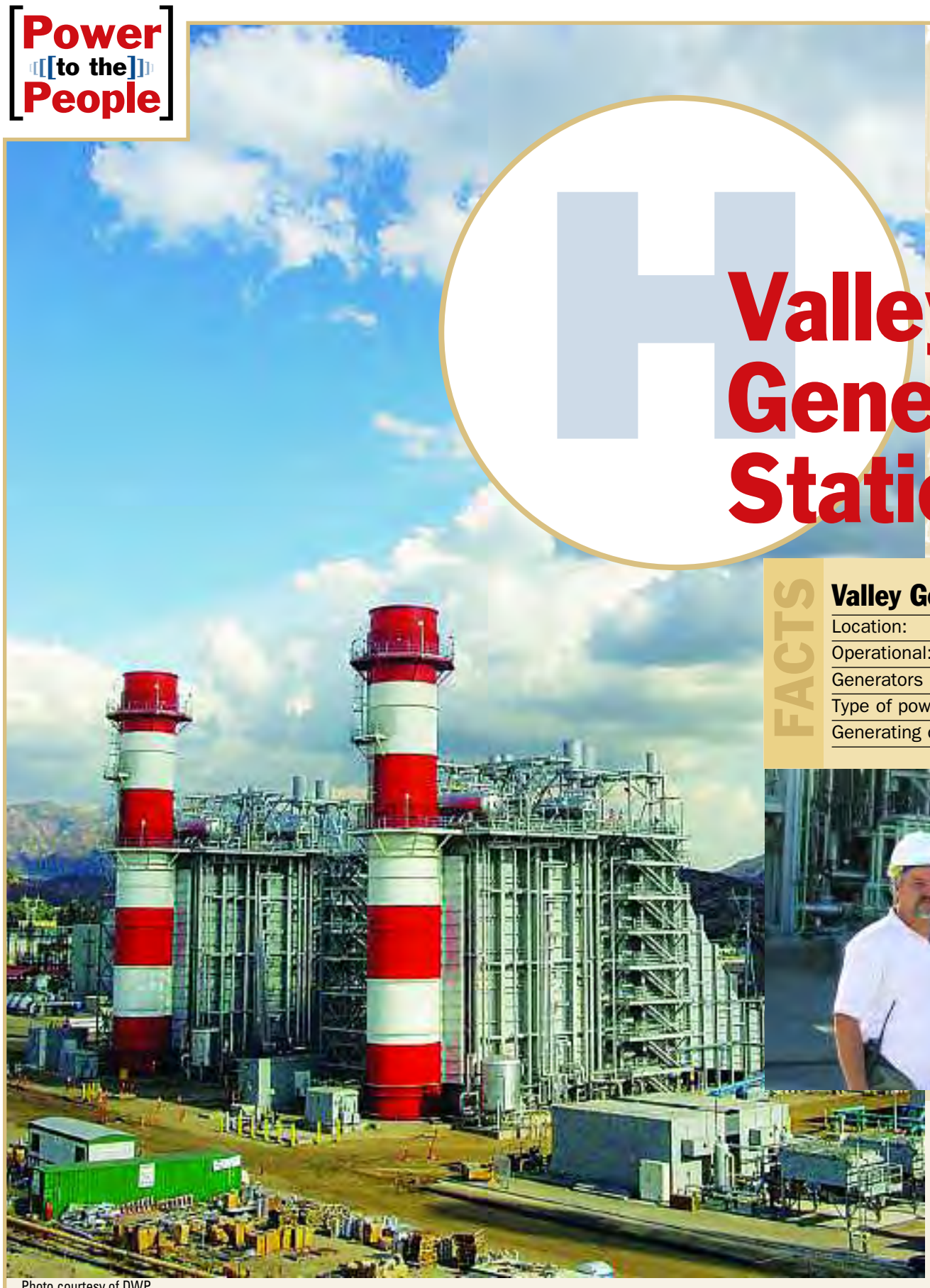


Photo courtesy of DWP.

FACTS

Valley Generating Station

Location:	Sun Valley
Operational:	1956, re-powered in 1999
Generators replaced:	2004
Type of power:	Natural gas
Generating capacity:	533 megawatts

From left: Lee Beatty, Safety and Training, 29 years of service; Jeffrey Reid, 3 years with the DWP; and Joseph Jiwatrakan, 1.5 years of service.

Jeffrey Reid and Joseph Jiwatrakan make a routine inspection.

Carl Kinsey, Assistant Control Operator, 28 years of service.

The smoke stacks have long been recognized as a point of reference in Sun Valley.

From left: Chris Darden, Electrical Station Operator (ESO), 27 years of service; Leo Mangbas, Electrical Station Operator (ESO), 20 years of service; Jaime Marquez, Electrical Station Operator (ESO),14 years of service; Paul West, Electrical Station Operator (ESO),17 years of service; Elida Leal, Electrical Station Operator (ESO), 21 years of service; Anthony Juarez, Training and Safety Instructor; and Jeff Lams, Engineer, 21 years of service.

Sylmar Converter Station

THE FACTS

Sylmar Converter Station

Location:	Sylmar
Operational:	(Sylmar A) 1970, damaged in 1972 earthquake. Rebuilt immediately thereafter. (Sylmar B:) 1985. Both damaged following the 1993 earthquake.
Rededicated:	2005.
Purpose:	Convert power at the end of the multi-state Pacific DC Intertie power grid.
Conversion capacity:	3,100 megawatts
Fact:	The world's most powerful converter station.

Smoothing reactors work like a resistor and limit current.

State of the art equipment converts DC to AC current and vice-a-versa.

The conversion capacity of this station is 3100 megawatts.

The Sylmar convertor station has stood the test of earthquakes over the decades.

DC filters have to be cleaned every other year since the electricity collects dust onto the surface of equipment.

Power [[to the]] People

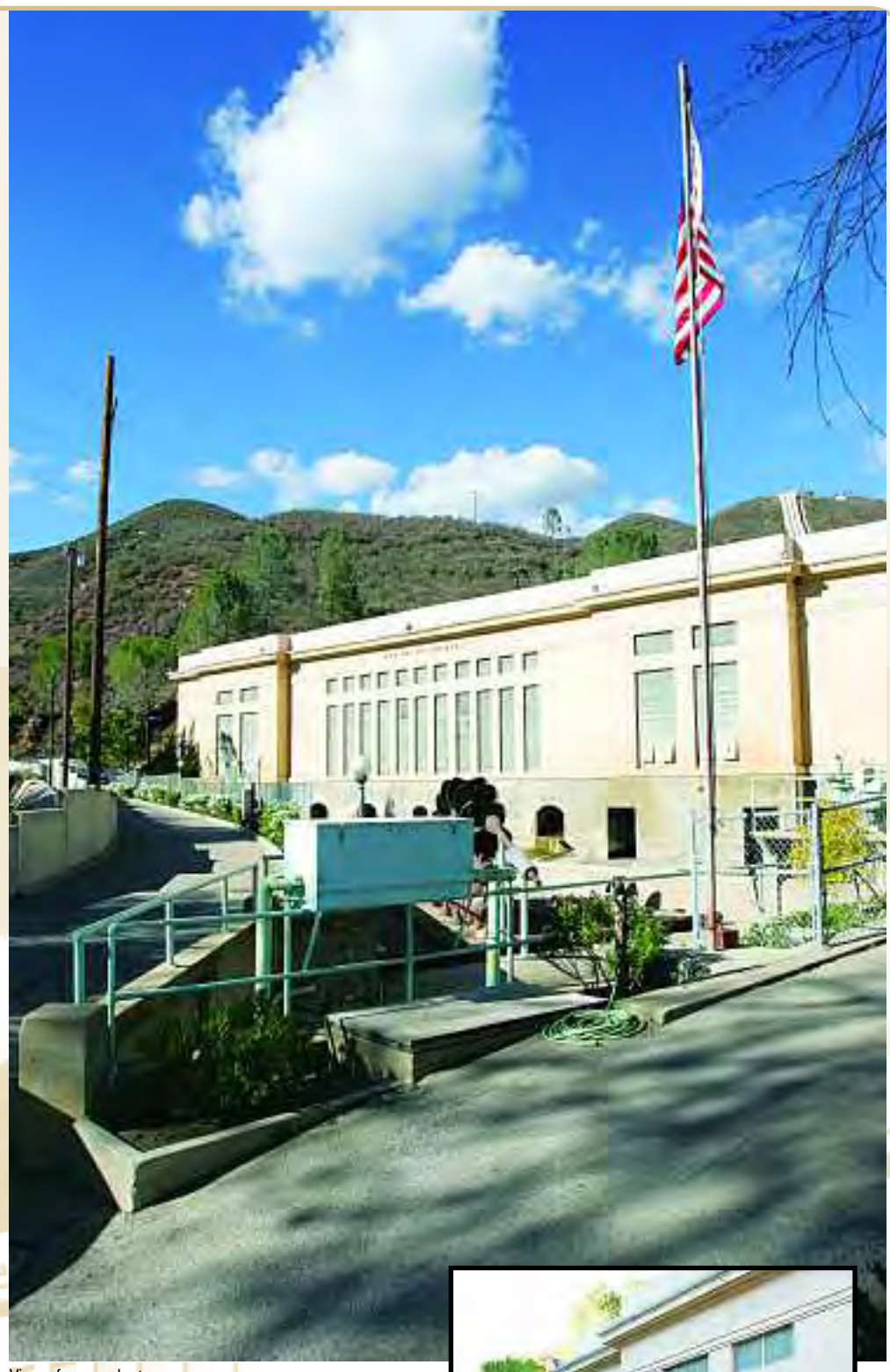
From left: William Youngquist, Electric Station Operator, 25 years of service; and Richard Jimenez, Electric Station Operator, 29 years of service.

Henry Hopkinson, Control Room Operator, 37 years.

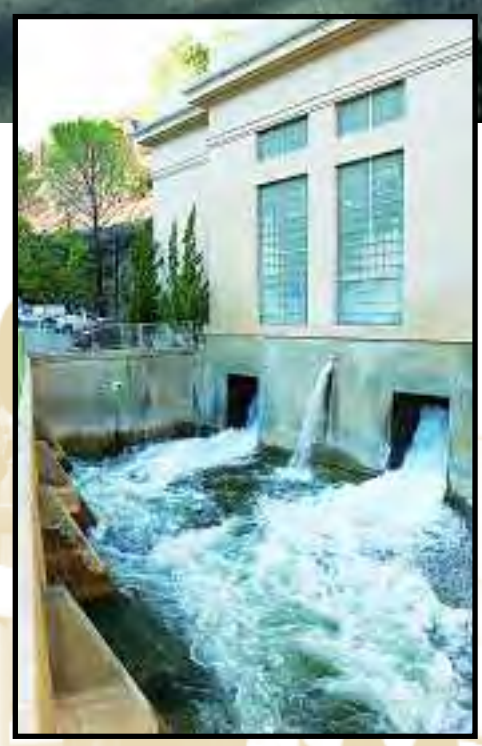
William Youngquist shows original artwork.

William next to original waterline.

View of waterline.



View of powerplant.



Running water.

San Francisquito Generating Plants 1 and 2

THE FACTS

San Francisquito Generating Plants 1 and 2

Location:	Saugus
Operational:	1917 (Plant 1, rebuilt after the 1971 Sylmar earthquake); 1920 (Plant 2, rebuilt immediately after the 1928 failure of the St. Francis Dam destroyed it). Re-powered early 1980s (Plant 1), 2006 (Plant 2)
Type of power:	Hydroelectric
Generating capacity:	75 megawatts (Plant 1), 42 megawatts (Plant 2)
Fact:	Plant 1 generated the first power produced by the DWP for the City's direct use.

FACTS

Castaic Pumped Storage Power Station	
Location:	Castaic
Operational:	1973, re-powered 2005
Type of power:	Hydroelectric
Dual purpose:	Generate electricity during the day; and pump the water back up the hill at night, when power is less needed (and cheaper), to generate more electricity the following day.
Generating capacity:	1,175 megawatts

Castaic Pumped Storage Power Station

DWP employees repair powerplant equipment.

Roland DeVera, Control Operator, 22 years of service.