

Get Smart

Story and photos by Eric Wolfe

SmartMeter installers for Wellington Energy face the same issues that utility workers in the field have always faced: Vigilant dogs, not always friendly.irate customers, not always rational. Gas and electricity, inherently dangerous.

Since 2006, over 600 IBEW members at Wellington have automated over 7 million PG&E gas and electric meters, part of California's ambitious program to give customers more control over their energy use ... and their energy bills.

To Stacy Wallace, a journeyman wireman dispatched to Wellington by IBEW Local 1245, installing automated meters also means interesting work at good wages—far better than the waitressing work she did for five years before getting into the trades.

"The money is much better," she says. "I like to be outside. I like to build things. I like to make things work and make it look good."

On a sunny December morning she heads into the greening countryside south of Santa Rosa, searching for the next address listed on her hand-held. Wellington workers often visit 50 and more customers a day. But it's not like piece-work in a factory. Every meter installation comes with unique challenges.

First and foremost among them: finding the meter.

When Wallace arrives at the rural address that's first on her list, she turns into a long driveway and finds her path blocked by a metal gate. She opens it, pulls her pickup truck forward, closes the gate securely behind her, then continues driving toward a house set well back from the road. And there it is, on the side of the house next to the driveway: a PG&E electric meter.

But it's the wrong meter. The serial number doesn't match the one listed for this address on Wallace's hand-held. Time to see if anyone's home.

She's alert to the possibility of four-leggeds. Optimally, the hand-held will tell you whether a dog lives on the premises. Sometimes the sound of barking will tell you the same thing. Worst case scenario: teeth charge at you from out of nowhere, followed by a tail that's not wagging.

"A lot of customers have dogs. It's a potential problem," says Wallace, a self-confessed "dog person" who has five dogs of her own. "A lot of them are not going to get you, but there are some that can." Best idea is to try to read the dog's behavior—and to stay out of its way.

Wallace knocks on the door. No one home, neither canine nor human. She will have to figure this one out on her own.

Her eye follows the driveway that snakes around behind the house. About 50 yards distant she spies a power pole with a bank of metal boxes at its base. And bingo: she finds a PG&E meter with the right number.



Wellington Meter Technician Orlando Miramontes removed an old PG&E electric meter and shows off the new SmartMeter he's installed in its place.



Stacy Wallace, a journeyman wireman for Wellington Energy, removes the old electric meter powering a rural residence in Sonoma County.

She grabs a new meter from the back of her pickup, and scans it to confirm that she is putting in the right kind of meter for this particular application. But for some reason the scanner doesn't register anything, so Wallace enters the meter number by hand and gets the confirmation she needs. Now it's time for the show.

Running a By-Pass

As a journeyman wireman, Wallace has the training to run a bypass at the meter, re-routing the electric current so that the customer stays "hot" during the meter change-out. First she dons her personal protective equipment (PPE): safety glasses, hardhat with protective face shield, rubber gloves (which she tested for leaks with an air pump back at the Wellington yard), then regular work gloves over the rubber gloves. Failing to wear the required gear can get you fired in a hurry at Wellington, and you're not going to get much sympathy from the union.

Now she's ready to check the voltage—to make sure that power is in fact being delivered to the customer.

"You don't ever want to lay a jumper down when you don't know if power is being distributed to them," she says. If the power has been off for some reason and suddenly goes on, a customer inside could get hurt.

Switching the meter out is almost anti-climactic. Jumpers are put in place, some screws come out, the meter comes out, the new meter goes in, the jumpers are removed, a seal is installed to make sure nobody besides a PG&E worker can take the meter off, and *voilà!*: someone has a new automated electric meter.

"All righty," says Wallace, removing her hardhat and face shield. "Off to the next one!"

AN HOUR LATER, A FEW MILES AWAY...

The elderly woman in the blue flower-print pajamas wants to know why Orlando Miramontes has parked by her driveway on an otherwise deserted rural road in Sonoma County.

Miramontes, who is preparing to change out an electric meter on a nearby utility pole, stops what he is doing. Wellington employees know that customers come first. Especially if they seem upset.

As it happens, the meter Miramontes is preparing to work on measures power used by a Comcast device affixed to the utility pole. Miramontes identifies himself and assures the woman in pajamas that his visit is totally unrelated to her—she won't be affected in any way.

He's lucky, this time. The woman is friendly, exchanges some pleasantries, then lets him get on with his work.

It's not always so easy. Some residents view any kind of service vehicle as an invasion of their privacy. Others specifically oppose the deployment of automated meters, citing concerns about their accuracy or alleged effects on human health.

In some cases, the opposition is organized, even physical. On Dec. 14, 2010, just a week after Miramontes' encounter with the customer in pajamas, about 20 protesters demonstrated in the lobby of a PG&E office in neighboring Marin County, forcing the office to close for about two hours. And on Jan. 11 of this year, two women concerned about health issues were arrested when they tried to block SmartMeter deployment trucks in Rohnert Park—Miramontes' home base.

Wellington employees know it's not their job to sell customers on the idea of automated meters. Installation has been mandated by the California Public Utilities Commission to help customers improve their energy efficiency and lower their energy costs. If a customer doesn't want the meter, Wellington employees are trained to avoid confrontation and move on.

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After changing out the Comcast meter on the utility pole, Miramontes drives to a house a little ways down the road. “We’re going to do a dual account here—gas and electric,” he says.

The customer is already waiting at the door, having heard the truck pull into the driveway. Miramontes explains his mission, and that it will be necessary to briefly shut off electric power to the house.

Because Orlando Miramontes is a meter technician—not a journeyman wireman—he is not trained to set up temporary jumper cables to keep power on during a meter changeout. But the vast majority of PG&E electric meters are installed with “ring sockets,” which can’t be bypassed in any case, so the power has to be briefly interrupted no matter who is doing the work.

First, though, he steps through some weeds to reach the gas meter. He verifies he’s at the right address, checks the type of meter, slips on his safety glasses and checks for stray voltage and obvious gas leaks, and takes a read. Then he removes a few screws, removes the index, attaches the SmartMeter module and reattaches the index. Then he presses his hand-held against the module for about 45 seconds to program it.

The whole operation takes less than five minutes.

Good Will Ambassadors

Miramontes, who’s been at Wellington for three years, found the job through an ad in the newspaper. “I was coming out of college looking for work. I liked the type of work it was.”

He went through the training program, which gives each employee one week of classroom training, including test board simulation training on all types of electric and gas meter installations, followed by several weeks of field supervised training before final testing and quality auditing. Because there is so much customer contact, Wellington expects its employees to be “good will ambassadors” for the project, putting a strong emphasis on standards of conduct and appearance—whether you’re dealing with hostile customers or just curious grannies in pajamas.

Now Miramontes is ready to tackle the electric meter. He lets the customer know that the power will be off for a few minutes, then moves to the other side of the house where the electric meter is located. The serial number confirms it’s the meter to be removed. He puts on his hardhat with the face shield and his work gloves.

After removing the seal he pulls the meter out, then checks for back-feed—which would be a sign that someone is illegally taking power, not to mention posing a potential electrical hazard to installers like himself. Finding none, Miramontes pops in the new meter, puts the seal back on, and checks to make sure that power is cycling through. He’s ready for a new address.

And this is how it’s done—building by building, one customer at a time. IBEW members at Wellington Energy, in partnership with PG&E, are laying the foundation for a new approach to measuring and using energy in California.

SMART CUSTOMERS

There’s a reason they’re called SmartMeters. Yes, the device is “smart” enough to measure energy use in hourly increments and transmit this data electronically to PG&E. But the real point of the meter is to give customers more control over their energy use—and their energy bills.

SmartMeters are about creating smart customers.

Automating meters was mandated by the California Public Utilities Commission, part of a long-term project to help Californians become more efficient in the way we use energy.

Changing out the meter of every single PG&E customer is an ambitious program. No surprise: it’s also been controversial.

IBEW Local 1245 itself did not welcome the prospect of automated meter reading the first time PG&E proposed it, well over a decade ago. In those days, meter reading provided good jobs for nearly a thousand IBEW members at PG&E.

PG&E’s first pass at the new technology didn’t pan out, but when CPUC regulators started getting behind the idea the union saw the handwriting on the wall. In a forward-looking settlement negotiated in 2005, PG&E and Local 1245 agreed on a historic long-term plan to phase out regular meter reader positions through a combination of attrition and helping employees obtain other positions within the company, or find work with the contractor that would install the new meters. Going forward, any vacant positions in meter reading were filled by temporary meter readers dispatched from the union hiring hall.

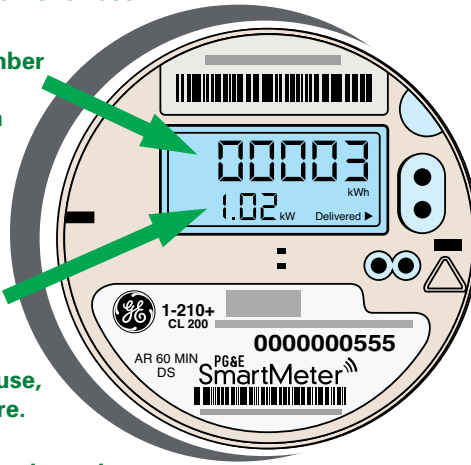
Today, only 116 regular PG&E employees work as meter readers. Their work is

There are two brands of SmartMeter, but the basic concept is the same for both.

This 5-digit number tells you how much energy, in kilowatt/hours, you’ve used since the meter was installed.

This GE-brand SmartMeter displays your current energy use, in kilowatts, here.

The meter cycles through other displays that give you additional information.



supplemented by 338 hiring hall meter readers, according to the latest available figures. After full deployment of the SmartMeters, an unknown number of workers will be needed to monitor the automated reads and to inspect and repair the meters themselves.

“Going clear back to the days of Ron Weakley, this union has tried to find ways to adapt to changing technology,” said Business Manager Tom Dalzell, who helped negotiate the meter reader agreement. “It’s better to adapt than have our members end up as roadkill.”

The union considers itself fortunate to have a company like Wellington doing the footwork in PG&E’s transition to automated meter reading.

“This company has been very conscientious about safety, something that’s very important to us,” said Senior Assistant Business Manager Ron Cochran. “We really appreciate Wellington being a fair and honest partner while working in our jurisdiction.”

Current Protests

Current protests over SmartMeter deployment tend to focus on possible health effects from exposure to radiofrequency (RF) radiation.

RF emissions from SmartMeters are far too small to heat up human tissue, (known as a “thermal effect”). This conclusion was affirmed in a survey released Jan. 11 by the California Council on Science and Technology, which found that SmartMeters emit RF radiation “that is a very small fraction of the exposure level established as safe” by the Federal Communications Commission (FCC).

The FCC has not set standards covering possible health effects from exposure to very low (or “non-thermal”) levels of RF. The FCC’s website notes that various scientific reports have observed some biological effects resulting from exposure to low-levels of RF energy, but “in most cases further experimental research has been unable to reproduce these effects.”

Research will—and should—continue on the health effects of the RF radiation that has become ubiquitous in modern society with the proliferation of wireless devices in our homes and places of work. But how many of us are prepared to toss our cell phones, for example, because of possible health effects that haven’t been proven?

Some of those objecting to SmartMeters claim that the radio signals from these devices have triggered headaches and nausea in people “sensitive” to electromagnetic radiation. Although there is not yet any scientific data to connect human headaches to RF exposure, legislation was introduced in December by Assemblyman Jared Huffman that would force PG&E and the state’s other utilities to offer customers a choice between receiving a wireless SmartMeter or an advanced meter that would transmit the same data through a wired connection—an option endorsed by the CCST in its report.

Climate Change

Ironically, the best case for SmartMeters is grounded in a very real threat to health and environment: climate change.

The metering devices installed by Wellington employees like Stacy Wallace and Orlando Miramontes are intended to give electric consumers more control over their use of electricity.

Consumers will be able to see how much power they are using, and how much it is costing them, on an hour-by-hour basis. Time-of-use rate structures will give PG&E customers a financial incentive to shift certain tasks—like running their dishwasher or washing machine—to parts of the day or night when power is more available, and cheaper. This in turn will allow utilities to put off building more power plants to meet an ever-increasing “peak” demand.

As environmentalists—and these days, aren’t we all?—we can wring our hands about the carbon being belched out of coal-fired power plants, and the dangerous warming of our planet. But leveling out the peak demand for electric power is one of the quickest ways to reduce the need to build more power plants. And automated metering technology—SmartMeters—will give every PG&E customer a way to make a difference in that important fight.



Stacy Wallace: “I like to make things work.”