Distributed Energy Resources
Connected

Hawaiian Electric
Maui Electric
Hawai'i Electric Light

March 2019

A cautionary tale: How hackers attempted to infiltrate U.S. electric grid through contractors

In early 2017, customers of an Oregon construction company received reports of a strangely worded email sent from its account asking the recipient to review attached invoices or to sign attached agreements.

The emails were flagged as a relatively obvious scam attempt and dismissed - until it happened again a few months later. This time, a suspicious utility client replied with a note suggesting the company had been hacked and received a tersely worded response reply claiming that the document was real.

The document loaded with malware wasn't "real", but the threat was very real.

A Jan. 10, 2019, Wall Street Journal article. "America's Electric Grid has a Vulnerable Back Door and Russia Walked Through It," explains that the attack that included the Oregon construction company was the opening salvo in a Russian attempt to infiltrate U.S. mainland utility companies through their vast network of contractors and vendors.

The newspaper reconstructed the events associated with what it called "the worst known hack into the nation's power system" which was done using the connections of dozens of small contractors as Russia's unwitting facilitators.

There's no indication that any contractors in Hawai'i or the Hawaiian Electric Companies were targeted in that 2017 scheme, but the hack impacted companies and/or utilities in 24 mainland states. However, another recent report reminds us that Hawai`i is an enticing target for bad actors intent on committing cyber crimes.

We're all aware of the standard techniques often targeting the most vulnerable populations through fake email and telephone scams. We repeatedly remind customers to be suspicious if they're called or emailed about an impending shut-off or paying with unusual methods such as bitcoin.

While individual payment scams remain the most likely cyber threat our islands face, the details of the 2017 Russian hack are far more concerning for us as a utility and should be to you as a contractor.

The Russian hackers, through a sophisticated phishing scheme, managed to take complete control of the contractor IT and email system and inflict damage before the anyone realized it happened. As the Oregon contractor in the WSJ story is quoted as saying, "They were intercepting my every email…What the hell? I'm a nobody."

While he may have been a nobody in his own mind, it was apparently just the type of company, along with dozens of others just like it, that the hackers set out to infiltrate. They looked for weaknesses in entities with utility connections in order to slide undectected through the formidable defenses our industry now employs to protect our grid and systems.

The moral of this story is that even the smallest of businesses can become a tool for a cyber-attacker bent on a bigger prize. Here's some tips to keep in mind and share with your employees:

- ☑ Use and maintain up-to-date security protection on all IT hardware and software devices.
- ☑ Educate and train employees how to handle suspicious email attachments or links.
- ☑ Learn to recognize the signs of a potential phishing scheme (odd syntax, misspelled words, strangely demanding) even if you think you know the sender.

The Hawaiian Electric Companies are doing our part to→

Cybersecurity, cont'd

secure our island grids and thwart bad actors, but we need you to join us in the fight to keep our communities safe.

If you'd like more information about how to keep your systems safe from hackers, check out the resources at www.cyberhawaii.org. ☼

Editors note: The Wall Street Journal article is available online with a subscription. Sorry, we're not able to provide copies of the article.

Program capacity updates

Now that Smart Export and CGS Plus have been available for almost a year, it's time to discuss how we'll handle program caps when they are met.

Like Customer Grid Supply (CGS), Smart Export and CGS Plus will remain open until the installed program capacity is met. Installed capacity is determined by executed agreements. However, we will let you know when we have reached certain program capacity thresholds based on Conditionally Approved applications.

When we have reached the program capacity limit based on Conditional Approvals, we will continue to receive applications and process them as space becomes available due to previously conditionally approved applications being withdrawn. This is how the CGS program is now being managed and we are processing new applications on a space available basis.

Hawai'i Electric Light has surpassed the 50% threshold and is nearing the 75% threshold for conditionally approved applications in Smart Export. As shown in the table below, as of the week of 3/05/19, Hawai'i Electric Light had 2.7 MW of applications that have been conditionally approved and 0.7 MW of installed systems. There was approximately 1.22 MW of remaining program capacity when subtracting the Submitted, Approved, and Executed capacity from the initial 5 MW program capacity for Hawai'i Island.

As a reminder, Customer Self Supply and NEM Plus do not have program capacity limits. ☼

Company	Program	Submitted (RC/ITR/SR)	Approved (PI/PV+PE)	Executed EX	Remaining
Hawaiian Electric	CGS Plus	0.24	2.18	1.04	31.48
	Smart Export	0.17	3.54	1.62	19.67
Maui Electric	CGS Plus	0.08	0.52	0	6.4
	Smart Export	0.08	0.07	0	4.85
Hawai`i Electric Light	CGS Plus	0.12	1.13	0.73	5.02
	Smart Export	0.38	2.7	0.7	1.22
Capacity values in Megawatts as of 3/05/2019 Weekly Queue Report					

Oahu LTC payments

The Hawaiian Electric Company is discontinuing its long-standing practice to charge a fee associated with Load Tap Changer (LTC) settings as of March 4, 2019.

The LTC is a device that allows automated adjustment of substation transform load taps to change the initial voltage settings at the substation based on loading. Since 2014, the utility has assessed the charge to Oahu customers on a pro-rated basis if the addition of their system to the circuit required a modification to the LTC.

Given the proliferation of PV systems across the island, the LTC adjustment is now considered to be part of routine grid maintenance and the costs will be recovered through other available means rather than charged individual PV customers. Payment of LTC fees issued prior to March 4, 2019 are still required to be paid as a condition of interconnection approval. ☼

CGS Plus 2nd meter socket reminder

Please refer to our guidelines prior to installing the second meter socket for CGS Plus systems.

Our crews have encountered situations where the socket was improperly installed, not ready for installation or completely inaccessible, which prevented them from installing the second meter required for control purposes.

These situations result in delays and frustration for everyone involved. If it is not possible to place the second meter socket on the premise within the stated guidelines, contractors may submit paperwork to switch to the aggregator option or work with the customer to find a different program that suits their needs. ☼

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