

Volume 24 Issue 1 April 2014

SURPA – SCRPA – IURPA – Joint Conference June 10th – 13th Orlando, Florida



















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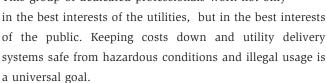
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From the Chairperson

s the incoming chair of the IURPA Board,
I wish to acknowledge that it is an honor
and privilege to be involved with people in
revenue protection agencies throughout the world.
This group of dedicated professionals work not only



Massive changes are occurring throughout all the utilities whether providers of gas, electric, water, phone or cable. Advances in information gathering and analysis alone, (both hardware and software) move ahead so quickly it can make one's head spin. In this environment the resources and support of both IURPA and the local professional organizations become ever more important

Looking for suggestions to a particular challenge? The IURPA and regional websites can provide resources for information and feedback from industry professionals almost immediately. They also provide a platform for sharing information and insights.

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Wayne Wohler IURPA Chairperson

Regional, international, and joint conferences allow all the industry to come together and exchange information. Sessions at conferences foster open discussion of new (and on-going) challenges and possible solutions. New approaches may develop from the group during sessions as well.

It is vitally important in any profession that there be forums for the exchange of information and innovation, and for growth.

Vendor representatives for hardware as well as software companies have become actively involved at conferences. Now, the conferences are providing platforms for interaction between revenue protection professionals and those companies manufacturing the tools used to do the job. Representatives from industry specific manufacturers interact with all levels of revenue protection staff. They listen, offer solutions, and ask questions to learn better ways to provide the industry with improved and innovative services and products. Everyone benefits from this.

The purpose of this short article is two-fold...to remind everyone of the often overlooked value of our professional organizations and to encourage more and more revenue protection professionals to join. Get involved. Show up (as the budget allows). Submit articles to IURPA about successes, challenges, failures, or just humorous issues associated with utility revenue protection.

It is vitally important in any profession that there be forums for the exchange of information and innovation, and for growth. For revenue protection the support system can be found in the professional organizations.

Each year we all begin the process of justifying our revenue protection departments to our companies. This year will be no different. But with resources and data from IURPA and regional groups, it may be a little easier.

Here's to a new year that is constructive, prosperous, and safe for all. Happy 2014!

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WSUTA NEWS

By Jeffrey M. Kauf, WSUTA Board of Advisors

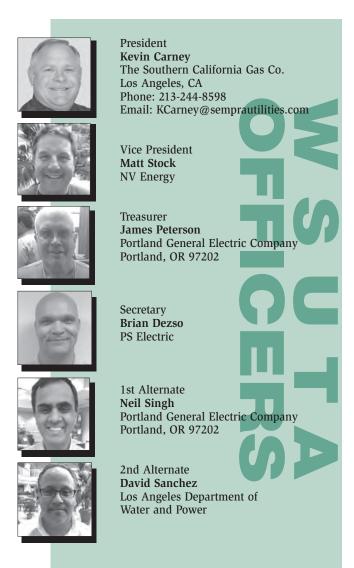
restern States Utility Theft Association would like to thank the IURPA Board and members of IURPA for their participation in the 2013 WSUTA / IURPA Joint Conference. The conference was held in picturesque Lake Tahoe, CA. We were treated to outstanding presentations from regional group members as well as our international members from France, South Africa, Canada, and Israel. There was a lengthy panel group discussion on AMI and Revenue Protection. Our subject matter experts, Ed Brooks, NV Energy; Kevin Carney, So Cal Gas; Bryan Dezso, APS; Gary Fromm, Modesto Irrigation District; Steve Montgomery, PG&E; and Jim Peterson, PGE; have over 185 years of experience and knowledge. There was an exciting presentation on Marijuana Grow Operations by dynamic speaker, Officer John Wilson of CBL. Gary Fromm provided information on how data analytics are assisting in detecting electricity theft through drops in voltage. Attorney Ken Whittall discussed maximizing your monetary recovery after power theft. Arnett Industries provided additional training in Revenue Protection through Gary Signorelli and Kurt Roussell, two very knowledgeable and long standing members of the Revenue Protection industry.

Former WSUTA president and current advisory board member Jim Gibson was presented with the 2013 IURPA Revenue Protection Professional of the Year award. WSUTA members are nominated for this award and a selection committee makes the recommendations. In 2014 WSUTA would like to present our own Revenue Protection Professional of the year award, so please go to www.wsuta.org to nominate someone that you feel is worthy.

WSUTA would like to welcome new Board members, Vice President, Matt Stock, NV Energy; Treasurer, James Peterson, PGE; Secretary, Bryan Dezso, APS; Alternates, Neil Singh, PG&E, and David Sanchez, LADWP. These individuals bring very diversified experience to the WSUTA Board and will provide excellent guidance to the annual conferences for years to come. In 2012, the WSUTA Advisory Board was developed to assist the Board in their preparation for the upcoming conferences. The Advisory Board consists of former WSUTA Board members devoted to Revenue Protection and dedicated to WSUTA.

WSUTA has been working diligently to update our website and keep you posted on our conferences and agendas. We are very happy to announce that the WSUTA conference is set for September 8 – 11, 2014 in Long Beach, California at the world famous Queen Mary. Conference registration is \$350.

The historic Queen Mary hosted her first passengers back in 1936, but now this "Grand Lady" is permanently docked in



the Long Beach Harbor and continues to extend her hospitality to thousands each year.

With work hours cut, job losses, price increases, and businesses facing closures, utilities may experience an increase in theft as some customers might choose to take unrealistic and illegal measures to get more for less. It's with strong efforts and knowledgeable staff working towards catching and eliminating theft, that the revenue stream from utility sales can remain stable and on track with production, ensuring that rates stay as low as possible for as long as possible. How can your business afford to not attend?

It's our responsibility to succeed in this effort by providing informative, relevant, and useful presentations and discussions to our membership. We're working on bringing in presenters covering a wide range of topics of concern for all utilities.

Please visit our website at www.wsuta.org for additional conference and registration information and for further updates. Looking forward to seeing everyone in Long Beach.



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2014 NURPA FALL CONFERENCE & TRAINING SEMINAR

September 17, 18 &19 Date:

Location: Queensbury Hotel

88 Ridge St., Glens Falls, NY • 1-518-792-1121

Room Rate: \$109 per night before July 19

Upon availability after July 19

Registration: \$250 - Meal Package is included.

Registration will be on Wednesday, Sept. 17th from 9:00 – 12:00 pm with the vendor products and services display from 4:00 – 6:00 pm.

Please note that we can no longer wait for last minute registrations. The hotel is reserving space that would otherwise be rented. To avoid penalty fees, we MUST have conference registrations AND hotel registrations completed by July 19th otherwise we will be forced to cancel this conference.

Please make room reservations directly to the Queensbury Hotel.

PLEASE MENTION "NURPA" AT THE TIME OF REGISTRATION TO ENSURE ROOM AVAILABILITY

> A formal agenda and registration form will be available in the NURPA section of the IURPA website under the Conference tab.



WHAT'S NEW IN THE MIDWEST?

By Paul Unruh, Exelon, Oak Brook, Illinois

ike much of the United States, these winter months have dragged on with a white blur caused by mounds of snow and temperatures so cold that 20 degrees above zero feels like a heat wave! While the weather didn't allow for much revenue protection work to be done in the field, it was a productive time for the Midwest Energy Theft Association (META).

META was able to put a new Co-Chairman, Treasurer and Secretary in place to round out a Board of "one" (the author of this article) following the retirements of former members Kurt Roussell, Jeff Meyer, Dave Denham and Dennis Hurtt.

Below are short biographies on the entire META Board.

President - Paul Unruh, ComEd, Manager, Revenue Investigations. Paul is a 35 year ComEd employee having spent most of those years in customer service and metering assignments. Paul has been involved with revenue protection in one form or another for many years, but officially assumed revenue protection responsibility in 2005 and has been a META Board Member since 2008.

Vice-President – Tommie Gray, Sr. Supervisor, Revenue Protection Department, Ameren Missouri. Tommie is a 30 plus year Ameren employee. He has held numerous field assignments during his career have prepared him well for his role in revenue protection. Tommie has had an active voice with META over the years in non-board related roles.

Treasurer - Dan Stevens, Physical Security, Leader, Investigations and Revenue Protection, Integrys Business Support. Dan is a 30 year veteran of Integrys and People's Gas in Chicago. He has considerable field experience in Integrys/People's Operations group. Dan's field experience has given him a great foundation for his current role in Investigations.

Secretary – Christine Smith, Senior Investigator, Revenue Protection, We Energies. Chris has been a revenue protection investigator at We Energies for the past 16 years. Prior to her employment at We Energies, she was a Police Officer for the City of Madison, Wisconsin.

So, now that a fully functioning Board is in place, META looks forward to getting back to the business of hosting Midwest revenue protection professionals from the entire utility spectrum. META has a lot of work to do. From organizing member activities to restarting our dormant website, there are plenty of tasks to keep the team busy (in addition to our day jobs).

While the Board hopes to conduct member activities in 2014, we want all IURPA members to know that META will host the 2015 IURPA conference in May, 2015. The venue is still TBD. However, the bottom line is this: META is still in business and we look forward to seeing all of you in the Midwest in 2015.





RPI, REVENUE PROTECTION INTELLIGENCE: MODEL-TEST, IMPLEMENT-VERIFY

By Ruben Ortiz, Business Analytics & Innovation Administrator, Orlando Utilities Commission

Foreword:

I'd like to share with you one of the most enlightening experiences in my career as a developer. It has nothing to do with an exotic line of code or optimized script. Six years ago, when I was writing



Ruben Ortiz

queries for banks, desperate to identify potential risk in their loan portfolios, I became frustrated with my traditional SQL approach to queries. Folks will tell me that the report should have x, y, and z fields and I would happily comply. Now I was tasked with identifying mortgages that met a well defined set of complex rules. I realized then that I had two options... one, whip-up the slickest spaghetti code that I could muster or two, treat this like a software engineering project and abstract the business rules from the messy code. In other words, the business rules would have an implementation separate from the mundane mechanics of a SQL query. It worked. The end product was incredibly accurate. Best of all, I could walk my client through the jungle of SQL and show how the business rule was implemented.

In the world of Revenue Protection, regardless of which BI platform is chosen, key to your success begins with the business rules. The business rules, once compiled into a list become a use-case. The use-case forces you to condense your idea into a set of measurable rules and conditions. This process, more than anything else, will make or break your project. Why? It's simple, Business Intelligence, for all that it

promises, is nothing more than a query engine with charts. Its intelligence is not an intrinsic part of the tool. The intelligence in BI is the product of a question, from which rules can be derived and action taken. A race car, for example, becomes a race car, only when the driver is engaging the steering wheel and pressing the acceleration pedal. In a similar way, Business Intelligence can only be realized when the right person is asking the right questions. Until then, it's just a pile of bits.

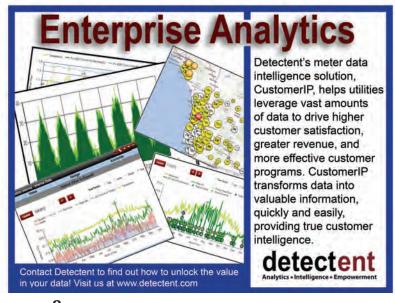
For BI to succeed in the Revenue Protection space, you must first be asking the correct questions- Even if you already have a BI platform, if the process does not begin with a use-case, your chances of success are doubtful. With this in mind,

I'd like to suggest an approach that worked for us at OUC. It doesn't have a formal name so let's call it RPI- Revenue Protection Intelligence.

RPI vs BI, how are they different? Let's begin by analyzing each other's environment. BI is typically an enterprise endeavor. As such, its architecture and supporting data flows are designed to answer enterprise level questions. Further, the BI development staff is typically "firewalled" in their IT kingdom with little knowledge of the Revenue Protection business and less about the energy. They are also constrained by competing and conflicting priorities, i.e. supporting HR, Payroll etc... lastly, they will take a "one-size fits all" approach to the infrastructure. This may work for the enterprise, but RPI requires a different approach.

Unlike traditional BI projects, RPI requires a more flexible environment. The goal in a RPI query is not necessarily efficiency and speed. The goal is to implement a business rule. Do optimize your query, but give precedence to the implementation of the business rule (the use-case). The other key difference is your development resource. Ideally, the developer is a member of the Revenue Assurance team. Communication is critical to this process and having the developer reside in a different department, such as IT, can handicap the communication or delay a project due to conflicting priorities. The RP team should also have its own hardware resources with unrestricted access.

RPI begins with a well defined use-case. Everything else must support the use-case, from the ETL to your table schema, it should be optimized for RPI queries and nothing





else. So that means that your architecture may look very different from a traditional data warehouse. That's ok. It's expected. The way you query the data is also different. At OUC, we implemented this approach with success. The results were incredible- In our first year, our back billed revenue grew by 200%. The numbers, as impressive as they may seem, serve to underscore the value of a "use-case first" approach.

Don't start writing use-cases right away! There's a process that you should follow. The use-case, when first conceived, might contain valid or invalid assumptions. It must be tested and tweaked until the right question is formed.

Use-Case Driven: Define and Test

Let's look at an actual use-case in detail to demonstrate the RPI process. The use-case represents an instance of a theft exception, defined with clear properties and attributes. For this article we'll create a use-case based on the tamper flags of a traditional AMR meter.

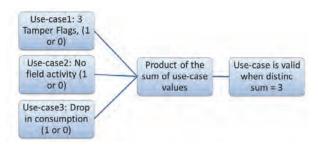
The following defines our "Tamper Flags" use-case for electric meters:

Purpose	To detect drop in electric consumption due to tamper flag trigger.	
Rule	When True	When False
A. Three consecutive tamper flags, per meter reading in the last four months	1	0
B. A field activity in the CIS cannot exist between the tamper flags and two months prior to the first tamper flag	1	0
C. Consumption must show a decrease (keeping this rule simple)	1	0
Distinct Total	3	0 or Distinct Total <3 or Distinct Total >3

The use-case is true when the distinct sum equals the count of unique rules, so in this example, our use-case is true only when the distinct sum is equal to three for each meter. Remember, the main rule here is to subordinate all processing to the business rules. Yes, you could write SQL to join on x and y and then union the results to table-A and left outer join to blah blah blah...this is spaghetti code. Instead, we need queries that focus on implementing the business rules. What you

should see are "data flows" in your query whose output will contain the results of a use-case, with a state of either 1 or 0.

The implementation of the use case looks similar to this:



Note: There are different ways of implementing this type of logic, but in general it's based on an aggregate filter at the meter level.

What is particularly attractive about this technique is the ease in which the use-cases can be tested. Each data flow can be executed and the result set analyzed to determine if the flags are identifying the exception.

The use-case must be tested. Before committing significant time to development, the core assumptions must be tested to determine its validity. I've been fortunate to have received excellent use-cases. In almost every instance, each use-case was tested. This should not require a complex query.

In fact, mine are often throw-away queries- designed solely for the purpose of validating the core assumptions of the



use case. It's in this phase that new rules will be discovered, implemented and tested.

The very nature of this process is iterative. Since the usercase is driving the query, it must be fine-tuned.

Beware! The use-case must be well defined, but a use-case with many conditions, usually more than six conditions, may cause you to exclude too much data. Start with a small set of known conditions, then test and refine.

BI for Revenue Protection/Assurance provides one of the greatest ROI's that can be gained. Implemented correctly, an internal BI program can generate leads and help recover lost revenue. The first action item is the most challenging. Do you outsource or hire a full time resource or contractor?The answer is: it depends.

Each must be carefully evaluated, but both must begin at the same place- Define the use-case.

The follow-up to this article will tackle the implementation phase.

For additional examples relating to this article please visit my blog site, curiousAnalytics.wordpress.com

I'll post a simple framework for discovering missing accounts with missing service agreements.



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SURPA / SCRPA / IURPA - 2014 International Revenue Protection Training Seminar

Date: JUNE 10 - 13, 2014

Location: DOUBLETREE RESORT ORLANDO

> 10100 International Drive Orlando, Florida 32821

The tentative agenda can be found on the IURPA website and will be updated until it is finalized.

The hotel room rate for a single or double is \$129.00 per night plus applicable taxes. The rate will be honored 3 days prior and 3 days following the conference. To insure space and room rate availability, reservations should be made by Wednesday, May 21, 2014. Please make sure to state that you are with the SURPA group or use the link provided on the www.IURPA.org website.

Event Registration is \$225.00 if received by Friday, May 23, 2014. After May 23rd registration fee is \$250.00. In situations where one check is being sent for a group please send a registration form for each participant.



VENDORS MAKE IT ALL HAPPEN

By George Balsamo, IURPA FINANCE DIRECTOR

ver the years I've grown to truly appreciate the involvement of the various vendors in our industry. When I first began attending utility meetings, I would peruse the vendor display tables examining their products and not giving much thought to the goings on behind the scenes. After all, the vendors



George Balsamo

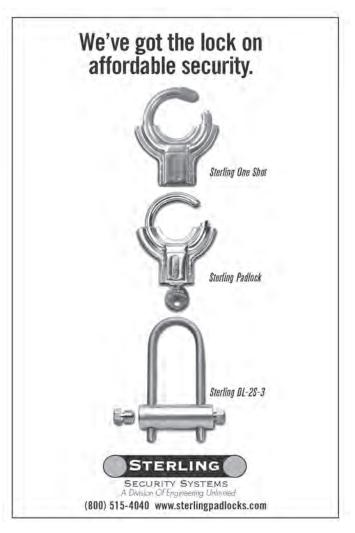
were there to sell their products & services, right? Well, not entirely. In this relatively unique side of the utility industry revenue protection professionals have an honest concern about the effects of energy theft. I've found that investigators, analysts, coordinators, supervisors and managers truly care about what they do and the benefits they provide their companies. Vendors are no different. They also have a deep concern for energy theft. After all, they're customers too, and theft just isn't acceptable. Vendors contribute their time, energy and money to keep our business "in business". Conferences are wonderful ways we can share our experiences and learn from one another. The vendors make these conferences not only enjoyable, but more often than not, they make them possible. Vendor receptions provide the perfect setting for examining and comparing products and services, discussing issues with counterparts from other utilities and establishing relationships that assist Utilities in further developing our respective departments.

The vendors associated with IURPA and the regional groups offer their support in a variety of ways. Vendor coordinators assist regional groups in conference planning. They make arrangements for vendor display areas ensuring all vendors have the proper space and utility connections they need to show their products. They collect vendor fees, which are applied to the cost of meeting space and food. Registration fees to attendees are lowered as a result of vendor contributions. Vendors assist in locating speakers for regional and national conferences through their many contacts in the industry. They offer financial support to our IURPA web site, and bare the lion's share of the cost for the IURPA newsletter through their advertisements. Vendors provide articles for the newsletter, and solicit others for articles so that we may all benefit from information derived from the newsletter. And yes, all of our vendors are dues-paying IURPA members too.

These individuals spend a great deal of time and effort with

our organizations. Their jobs take them far from home and their loved ones. Sometimes an occasion is missed at home because business takes them out of town and sometimes they're just plain missed. Travel is an ongoing part of their world, and as fascinating as it can be, it can become tiring from time-to-time. Travel delays and layovers occur; poor driving conditions and breakdowns happen but we, the customer, don't see these incidents. We see bright smiles, energetic voices and an interest in serving our needs.

Having come to an understanding of their involvement, I've grown to truly appreciate our vendors. I applaud their dedication to this industry and admire their fortitude. They truly have our best interests at heart, and are there when we need them. All are willing and able to provide whatever assistance is necessary. So during your next visit to a vendor display booth at one of our conferences, don't just look at the product, look at the vendor.





"...HAVE YOU MURDERED AND ALSO TAKEN POSSESSION ?"

(Kings 1, 21:19)

By ITZICK MICHAELI, REVENUE PROTECTION MANAGER, ISRAEL ELECTRIC CORP.

Several months ago, a meter reader from Ashkelon, a coastal city at Southern part of Israel, and the Revenue Protection investigator of the local Israel Electric (IEC) regional office, exposed a few cases of suspected thefts of electricity.. Experienced RP investigators and metering technicians, verified cases of bypassed meters and tampered metering systems. All



Itzick Michaeli

cases had a common denominator – theft of service at high-rise buildings (8 - 10 floors, 32 to 40 apartments). With all cases, one of the three phases was not recording the electricity consumption of the building's shared service meter (lifts, staircase lighting, pumps, pool, workout room etc.).

Such an exposure, usually indicates a broader phenomenon with potential theft of electricity on a large scale . As part of the close cooperation of the Revenue Protection units and the National Metering Unit , the information was immediately reported to the company Intelligence & Investigations.

The case management has been passed to one of the National Security Unit investigators, the investigator began collecting intelligence, and made extensive use of the data mining information produced by the RP units of the IEC Southern District and the RP manager at the headquarters of the Southern District..





For several weeks, the undercover investigator documented about 150 locations were evidence of electricity theft was exposed..

The undercover documentation process was carried out in the city of Ashkelon and in a neighboring city, Ashdod. The findings confirmed that it is indeed a widespread phenomenon, possibly carried out by the same Property Management Company that contracts all the buildings that were investigated.

According to the collected evidence , the Property Management Company fully billed each house globally for the bi-monthly electricity consumption. Since the tampered and bypassed meters recorded only two thirds of the real consumption. both Homeowner Association (HOA) and IEC were robbed by the Property Management Company managers who pocketed the money.

We figured out, that we face a clear sting case of electricity theft and financial fraud.

The scope of the electricity theft:

The undercover investigation revealed, that we were facing a widespread phenomenon, in a scope that was never exposed before .

In 50 apartment buildings the installed metering system was tampered and one of the three phases was bypassed.

In 100 –apartment buildings one of the three phases of the regular meters was bypassed.

Several other businesses of the Property Management Company owners were investigated, and a few more tamper cases were exposed.

Transfer of the investigation to the Israeli Police Force :

Due to the scope and complexity of the case, the investigation materials were passed to the Chief of the Israeli Police investigations division, and to the investigations officer of the Southern Police Region, aiming to carry on the rest of the investigation under the supervision of one of the most professional units of the Israeli Police .

A decision was made, that the case will be handled by the Central Unit of the Lachish Police Force, and the case materials were transferred accordingly.

For several months an undercover investigation was conducted by the Lachish Police Central Unit, in cooperation with the Intelligence and Investigations Unit of the IEC . During the Investigation, considerable efforts were invested, including the usage of various tactics and secret measures.

During the investigation, the names of the Property Management Company managers involved were revealed, and the suspected electricity fixer responsible for the meters tampering and bypasses, was documented at a few scene of the crime arenas..

He and three company owners were arrested on September 15, 2013

Revenue Protection investigators and house connection teams of the Southern District, started inspecting all apartment buildings on the suspected theft list.

The exposure activity went on for several days due to the many places where electricity consumption recordings were tampered with.

The investigation outcome:

The fixer's house and vehicle were searched, equipment, and some other items were confiscated .

During the interrogation, he admitted to tampering with several IEC meters and installations for stealing electricity, on behalf of the owners of the Property Management Company, and named them. The three owners of the Company were arrested by the police, and brought in for questioning. Two of them were kept in custody for nearly a week.

About 15 computers were confiscated from the Property Management Company offices by the police for further investigation .

The estimated value of the electricity theft reaches \$ 300,000. Case status:

Since the electricity service contracts in all buildings were signed by the Homeowner Association (HOA), they are held responsible for the IEC losses.

For a short while, there was some hope that the Property Management Company will be ready to reimburse the losses, but two weeks later, all 160 employees were fired and the company was shut down.

The IEC decided to sue both the HOA and Property Management Company.

Considering the unusual and problematic financial status of the HOA's, the IEC decided to avoid disconnecting the apartment buildings for non payment, and patiently wait for a reasonable settlement of the debt.



Pin-pointing Losses... ...Case Closed!!!



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"OVER THE ROOF"

By JOHN L. KRATZINGER, PECO ENERGY Co., BERNYN, PA

f you're a PECO Revenue Protection technician in the City Philadelphia, PA service territory this "Over the Roof" is a term that is used often.

Majority of homes in the Philadelphia area are "row" homes. Which means that homes are attached to each other street block after street block? The secondary



John L. Kratzinger

service wires are attached to the back of the house and getting to these wires is a challenge. From the secondary wires are the customer's entrance cable and the meter board. The row homes with driveways in the rear of the homes do allow access for our PECO vehicles workforce to work on, inspect and change meters if necessary.

The secondary service wires are attached to the back of the house and getting to these wires is a challenge.

The row homes that have no driveways but just an alley way create a bigger challenge. The alley is narrow, often with trash, debris, overgrown with vegetation, etc. (Picture 100 0267) Another hazard are dogs, it appears that everyone owns a dog, not just a dog but a pit bull and not just one pit bull but a few. As you walk down the alley, the dogs are leaning over the fences, poking their heads through the fence and barking like crazy. Some of these dogs don't bark, the dog will allow you to enter the yard then come from under the vegetation, under the house or out the door and will attack.



(Picture 100 0267)



(Picture 100 0687)

So what is the answer to these challenges? "Over the Roof" we use two men on a bucket truck, one stays on the ground and guards the bucket truck and the other tech goes up on the roof either from the front of the house or end of the row homes and cross to the

correct address where work is to be performed. Once a tech gets to the roof in the bucket, he climbs out attaches his fall arrest equipment to prevent from falling off the roof. Walks across the roof to the back of the house and is able to work on the service head. (Picture 100 0687)

Oh, by the way, the Revenue Protection technicians do this work upside down. (Picture 100 0718)



(Picture 100 0718)

This is successful about 80% of the time. What stops us from working on all the row homes with alleys are: structure damage to the property, parked vehicles where we can't get the bucket truck closer to the house, three story row homes or a home with a peak roof.

In the last few years the Revenue Protection team has increase their fleet with 3 bucket trucks to handle the volume of jobs that come in. For a long time customers who were stealing felt secure that PECO could not get to their service and terminate them.

Are PECO vehicles are also equipped with ladders and we use them when we can't get a bucket to cut the taps.

I will enclose some pictures of what I'm talking about to give you a better idea of what we face on a daily basis.

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The International Utilities Revenue Protection Association was founded in 1990 to protect member utility companies worldwide from revenue losses associated with unauthorized use of service. In twenty-four years, the organization has grown from a small regional group into an association that includes representatives of more than 400 utility companies around the world.

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