

Volume 26 Issue 1 Spring 2016

NURPA – IURPA – Joint Conference September 20th – September 23rd – Philadelphia, Pennsylvania





















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From the Chairperson

reetings, as the 2016 Chairman I want to share with everyone my background. I have been with PECO, an Exelon Company, for 48 years in Philadelphia, PA. I started my career as a lineman and spent 20 years doing line work. Since then I have worked as a dispatcher, trouble man, aerial line supervisor, manager, Shift manager and for the last 13 years as Senior Supervisor of the Revenue Protection team. Along the way I attended night and week-end College and have a bachelor's degree in Business and a Master's degree in Leadership and Project Management.

So what does International Utility Revenue Protection Association (IURPA) mean to me? In 2003, I became the supervisor of the Revenue Protection team at PECO. At the same time, I was attending Neumann University and working towards a Master's Degree. I was tasked with having to prepare a paper on a specific subject for the Master's degree program. The natural fit

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John Kratzinger IURPA Chairperson

During my time with IURPA/NURPA one thing has remained constant-our vendors. These companies have always reinforced our efforts in stopping utility theft.

was Revenue Protection, including Utility Theft. Fortunately for me, I had access to PECO Revenue Protection's subject matter expert on Utility Theft, Jim Roscovich, PECO Foreman, Revenue Protection. Jim has 47 years with the Company with 35 of those years in Revenue Protection. Jim is a legend within our Company on Revenue Protection issues. Jim has played a critical role in Revenue Protection's development over the years. He has experience in complex investigations, developing reports, processing evidence, providing expert testimony and educating others on theft identification and recognition.

As I worked through the paper, it was Jim Roscovich who told me about IURPA and the Northeast Utilities Revenue Protection Association (NURPA). I graduated with my Master's degree and my manager suggested I present my paper to IURPA at their next conference. Enter Wayne Wohler (WSUTA) who was involved in the IURPA conference being held in Las Vegas, NV. Wayne told me someone just backed out of the agenda and was looking for another presentation at the time.

What a journey I have had with IURPA! My first conference was 2004 in Las Vegas, where I presented my paper on "Utility Theft" when I got my Master's degree. After the conference, I became more involved in IURPA/NURPA. I attended the NURPA conferences in Glen Falls, NY. I became more involved by providing presentations. In 2009, I was attending an IURPA conference in Atlanta, GA when George Balsamo asked if I would be interested in serving on the IURPA board.

With my background out of the way, I would like to ask for your help this year. Both NURPA and IURPA have spent a lot of time and effort putting together the 2016 conference. I am proud to announce this year's IURPA conference will be held in Philadelphia, PA from September, 21-23,

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2016. The conference will be held at the Doubletree Hotel, 4509 Island Avenue, Philadelphia, PA near the Philadelphia International airport. We are proud to introduce Cheryl LaFluer, Federal Energy Regulatory Commission (FERC) Board Member. Ms. LaFluer is aware of our organization and has been gracious enough to give our opening speech. NURPA has been working hard to put together a dynamic agenda and conference. Please go on the IURPA web site for updates and the latest information.

As you know, these conferences are invaluable in our efforts to reduce and eliminate utility theft. I want to encourage each of you to attend your local conferences and training seminars. The conferences provide a various agendas in dealing with electric, gas and water theft. The conferences also provide an opportunity to network with members from related utilities. Ideally, if you can attend your local association, make an effort to attend an international conference. During my time with IURPA/NURPA one thing has remained constant-our vendors. These companies have always reinforced our efforts in stop-

ping utility theft. Without their support, our conferences would not happen. Our vendor's products are constantly evolving and providing new technologies and innovation to assist our company's fight to stop utility theft.

So what does this mean to everyone? Well, for all the new people to Revenue Protection, there is an organization out there that can help support, educate and navigate new ideas for your journey into the Revenue Protection world.

On a sad note, IURPA's first Chairman, Ed Holmes passed away on Feb 2, 2016. Ed was a founding member of IURPA, and served in many capacities on the board in making these conferences work. Ed brought vision, dedication and a tireless work ethic to Revenue Protection. He shared this knowledge with everyone within the industry. Ed was always trying to eliminate, reduce and educate others about utility theft and its impact on a company. Ed's efforts will not be forgotten and through his hard work, we are a stronger organization.

I look forward to seeing everyone at the conferences and sharing memories of Ed.

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REPEAT OFFENDERS - APPLYING PRESSURE

By Thomas J. Marshall, Manager, PECO Corporate Security

Utilities across the country deal with the common issue of energy theft. Whether you call it theft of service, energy diversion or other name, the end result is the same customers who steal power, making the system unsafe for the community, our employees and emergency responders.

How we hear of these issues is



Thomas J. Marshall Manager, PECO

similar. Analytics, hot lines and employee identification serve as the Corporate Security main resource to identification allowing for quick investigation and correction. Many companies have follow up actions that include back billing and theft fees in an effort to recover lost revenue and change customer behavior. But what do you do when these

traditional avenues no longer work?

Theft of Energy transcends socioeconomic line. In some cases, utilities experience chronic service theft (Repeat Offenders) inside known high crime areas. Analytics have been unsuccessful as there is no meter to provide information and no calls to report the theft since it is so prevalent. A big challenge is theft of energy by the "ghost" customer. The properties are typically rental/lease agreements that are owned by a Limited Liability Company or third party real estate firm. In some instances, the property is occupied by squatters and property owners are not aware of the intrusion. Utilities unfortunately do not have the ability to solve the problem because there no account has been established and in many cases, there is no historical documentation of who resides at the premise. To make matters worse, repeat offenders are often located in an area with a diminishing infrastructure. This combination makes it difficult and unsafe for technicians to access a meter or aerial tap and remove the hazard to make it safe. Barrel Locks, clamps and meter removal don't stand a chance against these types of offenders. The fear isn't the money lost, but the hazardous condition left behind and potential liability due to the unsafe situations.

PECO's team has been addressing these repeated offenders. The success of this effort has resulted from the essential partnership between Corporate Security and Revenue Protection. The goal is to change the behavior through concentrated pressure. The approach begins with analytics and the identification of repeated offenders. The company defines what constitutes a repeat offender and develops a field investigation list based on the most egregious offenders across the service territory. A small team is created including Revenue Protection technicians and investigators to address the issue on two fronts, meter inspection and follow up investigation. This includes clearing theft and following up the investigation through photographic evidence, speaking with the occupants and homeowners and engaging local authorities. The team dedicates time each week to focus on addressing repeat offenders. In the past, the repeat offender's actions would be disrupted, but the effort by our company was predictable. The repeat offender rarely had contact with a company

representative and the field investigation was anonymous. Putting a face with the name was critical. During the field investigation, the investigator makes an effort to engage the occupant/homeowner and communicate r the situation and describe our company's next steps, which could include criminal prosecution. Additional steps include engaging the property owners, who can be leveraged to change the behavior. The investigator also will involve local code enforcement teams to address the issue. In many cases, when theft of energy is identified, code enforcement investigators are aware of the property that is associated with historical violations. Continued pressure is the key to repeat offenders. The goal is to stop the behavior and create an active, safe account. Repeat offenders rely on the traditional process followed by the utility company. They anticipate there will be limited follow through and no personal ramifications for their actions. Applying pressure through codes enforcement, law enforcement and property management companies to expose their behavior. When utilized, it makes them vulnerable to eviction, code violations and even criminal arrest. The question remains, is it now worth it to continue this behavior?

Providing a concentrated strategy against repeat offenders creates safer neighborhoods. From the feedback we receive, most communities welcome us and are happy to see the behavior corrected.





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IURPA is Now Available on Social Media. Join and "Like" Us Today

by Kurt Roussell



Kurt Roussell

t the 2015 Board Meeting for the joint IURPA/META conference in Chicago, the IURPA Board of Directors authorized an IURPA presence on social media, specifically, LinkedIn and Facebook.

LinkedIn (www.linkedin.com) is the world's largest professional network for managing your professional identity. It is an essential tool to build and engage your

professional network. Board Member, Eddie Fee of the Orlando Utilities Commission will manage and maintain the IURPA Group. All IURPA members are encouraged to join the group.

Facebook (www.facebook.com) is the largest social network in the world. It allows you to connect with friends, family and other people you know. Kurt Roussell, Board Member, will manage and maintain the IURPA page (www.facebook.com/iurpa). Relevant information, and newspaper articles relative to Revenue Protection are posted almost daily. Plans include the creation of a private "IURPA Group" where members can communicate amongst themselves. All IURPA members are also encouraged to "Like" this group.

If you have any questions, please don't hesitate to contact me at kurt@revprosystems.com





META/IURPA CONFERENCE SUMMARY

By Paul Unruh, META President

It was a long time coming for the Midwest Energy Theft Association (META). After several unsuccessful attempts (thanks to the economic downturn) to hold a regional conference, META took on the task of hosting the IURPA



Paul Unruh Exelon Corporation

conference. Given META's recent past, the META Board was a bit nervous (to say the least) as planning began in mid-2014.

The conference dates of May 5th through May 8th, 2015 seemed far off, yet the Board knew time would fly, especially given that everyone had day jobs too! And boy did time fly fast. Before the team knew it, the conference was over. It was well attended and successful. As always, vendor support was outstanding and the venue (Chicago Marriott Hotel – Oak Brook) turned out to be a great choice to hold the conference.

While organizing a multi-day conference is no small task, the process didn't end up being as daunting as it sounded thanks to an outstanding effort by the META Board. Everyone pitched in and worked together as a team. When planning started, the group said "we'll never do this again". After the conference was over, the talk was about what we learned that would make organizing the next conference easier.

What did we learn that we can pass along to those of you who might be organizing your first conferences? First, handle conference registrations within the Board or team. META used a third party vendor to handle our conference registrations and to act as a liaison with the hotel for room reservations. META decided to use the vendor because they handled credit card transactions (META was not set up for this). While most attendees saw no issues with their rooms and the room rate, a few had no rooms when they arrived at the hotel and/or the rate they paid was not what was

advertised. The META Board apologizes again to those of you who endured this pain.

Second, let the hotel handle the room reservations. They're pretty good at what they do. Let them do it!!

Third, when you estimate the amount of attendees you think might come to the conference, guarantee only a third of those room nights with the hotel and work out a contract that allows you to increase the number of rooms if you see registration numbers exceeding expectations. META learned a hard lesson here. Thanks to the NFL Draft (held in Chicago the weekend after the conference) tying up most hotel space in downtown Chicago, the Marriott sold all rooms on two of the three nights the conference was in session. Had the hotel not sold out, META's lesson would have been much worse, like washing dishes worse! For those of you who couldn't attend, you missed presentations on Revenue Protection delivered by IURPA's international liaisons from England, Israel and South Africa. You also missed presentations from members ranging from post AMI installation activities to the building of case management systems. You missed verbal defense training (verbal judo) and discussions about common benchmarking across the utility industry. You missed wonderful presentations from an energetic District Attorney and a dynamic Media Relations director. You also missed an informative metals theft speaker, and some great video footage of Mr. Electricity who was caught in the act of stealing service. And, of course, you missed the interaction with vendors and networking with each other.

So, mark your calendars for September 20th through September 23rd, 2016 and join NURPA and IURPA at the next conference in Philadelphia. NURPA has been able to attain Cheryl LaFleur, Commissioner of FERC (Federal Energy Regulatory Commission) as the featured keynote speaker. We are all very excited to have Ms. LaFleur participate in next year's conference. As conference dollars go, the cost is inexpensive and you won't be disappointed!

"Nuts"

By Dave Whidden

Here we go again! We've all had customers like this over the span of our careers in the utility industry and in particular in the Revenue Protection world. Every now and then we get a customer who is not playing with a full deck but is just educated enough to be persuasive to the uninitiated and



Dave Whidden United Illuminating

even down right scary. They start out quiet and well-spoken and then they progress to blustering and throwing out big words. They threaten lawsuits and somehow manage to get in touch with anyone and everyone. They start with the customer service reps and then work their way up to the working leaders and then on to the first line supervisors. They don't seem to know how to take "NO" for an answer. They continue with their harassment thinking that eventually they'll find someone who folds (and often they do). They call the Mayor's office, their state representative, the attorney general, the PUC and anyone and everyone they can possibly harass in order to get their way. Often it's not even clear what exactly they want other than to fight with someone. During our most recent experience the gentleman was steps away from having our legal department give him \$1,000.00 towards his legal expenses when our attorney listened to reason and called his lawyer and questioned the charges. You guessed it! He was a client of theirs but they hadn't discussed or advised him specifically about his issue with us. What was clear from the discussion was that they were used to receiving calls such as this from others he had tangled with over the years. He was clearly what my fraud investigator stated he was. Nuts! A true waster of time and resources!

I remember my early days as a meter reader when we would be assigned a new route and they'd tell us we needed to knock down the repeat estimates. I would try my darndest to get into the addresses that were E-7 and above. An E-7 meant that the meter had been estimated every two months for 7 visits (approx. 14 months). That's a long time to go unread. Every now and then you'd get into one of these houses

and taking a look around on your way to the meter you quickly realize just why the meter has been estimated so many times. Hoarders! Filth. Debris. Clutter. Generally unhealthy, unsanitary and just plain unsafe. I continue to deal with them to this day as I am part of a Joint Inspection Committee for a local city that deals with blight and hoarding. We share many of the same customers and so we work together to try to remedy these situations. It's not an easy task because you're weighing their rights against the rights of their neighbors and the general public. What it comes down to is safety, public safety. Filth brings vermin and disease. Hoarding creates a fire hazard as well as puts the fire fighters lives at risk searching for people in the house when it burns.

The common issue with these situations is mental health and personal rights. Once upon a time these folks were warehoused in institutions (not P.C. but it was the solution at that time) but somewhere in the 1980's many of these large institutions were shuttered in order to save money. A lot of these folks ended up in supervised residential situations and many ended up in unsupervised situations or sadly ended up slipping through the cracks in the system and eventually out on the street. Some of the folks we deal with today have gone through some type of loss, challenge or breakdown but they still require light, heat and water. That means that they are our customers and somehow we have to find ways to deal with them. The point of this article is to remind you that dangers exist not just in the wiring we deal with or the physical risk of entering structures where metering is housed. Always be aware of your physical surroundings and size up a situation before you put yourself in the middle of an unsafe situation. If your judgment is telling you something's not right then by all means trust your judgment and take stock of things first. Safety tailboards aren't just meant for physical safety considerations such as lighting, stairs, slippery leaves, etc. Check your surroundings first before you engage the customer and make sure you know what you're walking into.



THE PROSECUTION CHALLENGE

By Mike Wilkinson - Vice Chairman UK Revenue Protection Association

The number of offenders sentenced for [the illegal abstraction of electricity] is relatively low". That's the story according to the Sentencing Council which, for the first time, includes a guideline for the sentencing of electricity theft offences in the recently published Definitive Guideline for Theft Offences.



Mike Wilkinson Vice Chairman UK Revenue Protection Association

But the industry, including the UKRPA and our members, recognise a somewhat different picture.

In Issue 9 of the UKRPA newsletter, we publicised our findings that the value of known energy theft was between £200m and £440m every year. Suppliers and network operators follow up and estimated 150,000 leads per annum.

So why is it that, according to information gathered by the UKRPA via a freedom of information request, were there just 1,500 cases that reached a first hearing at magistrates' courts in 2013—just 1% of leads? Prosecutions are powerful deterrents. A strong sentence can spread a message that the crime will be punished, which will theoretically lead to a reduction in offending. Contrastingly, a lack of consequence could give the message that stealing electricity is deemed acceptable.

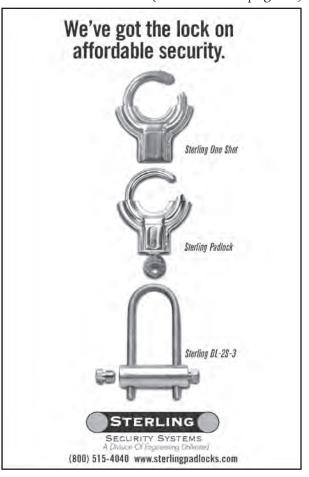
In November 2015, the UKRPA established a workshop to evaluate the prosecution chain, and identify those issues that were preventing the industry from securing successful prosecutions against criminals on a consistent basis.

The typical prosecution chain is long, incorporating many stakeholders. Prosecutions have the potential to fail at each identified hurdle:

- Energy company behaviour
- Energy industry standards
- Policing
- Crown Prosecution Service
- Sentencing Council
- Magistrates

Once prosecutions reach the point of consideration by a magistrate, there is a good level of understanding and engagement which allows the case to proceed effectively. The challenges encountered by most of our members precede this stage, and relate to consistent engagement with the police, and standards within the industry—particularly for more complex cases. These areas are where the workshop concentrated its attention. The case studies we considered explored challenges where organised criminal activity transcended a single supplier, therefore affecting a number of organisations, often across the length and breadth of the country. In these instances, ensuring a consistent approach within the industry is just as key as ensuring consistency from the police. To that end, the workshop considered the potential value of establishing a central industry body to orchestrate such investigations. We intend to explore this at the UKRPA National Conference in June 2016. We also heard from a law firm specialising in private prosecutions. In many instances, the

(Continued on page 12)



Crown Prosecution Service (or the Procurator Fiscal in Scotland) opt not to progress with an investigation, for instance if the cost of the prosecution was not deemed to be in the public interest. Our members will be considering the cost-benefit case of engaging private prosecutors to take forward cases, with the objective of securing a greater level of success in the courts.

We've also met with National Policing on several occasions over the past year. They are committed to helping us improve our reporting and evidence gathering practices, to build the best possible case to bring to court.

The UKRPA remains committed to taking every possible step to preventing theft of electricity and gas. As the saying goes, prevention is better than cure. Regular prosecutions will provide an effective deterrent to those intent on illegally abstracting energy, and improving all aspects of the prosecution chain will remain an integral part of the UKRPA strategy over the coming year.



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We look forward to seeing you in Cocoa Beach!



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2016 NURPA/IURPA JOINT CONFERENCE ANNOUNCEMENT

The **2016 NURPA** / **IURPA** Joint Conference & Training Seminar will be held on September 20-23 at the DoubleTree, by Hilton Philadelphia Airport. We are excited to announce **Ms. Cheryl LaFleur** as our guest speaker. Ms. LaFleur, Commissioner of the Federal Energy Regulatory Commission has graciously accepted our invitation to be our keynote speaker. Information with regard to Ms. LaFleur can be found at **www.ferc.gov/about/com-mem/lafleur/lafleur-bio.asp**

Registration for this conference will be on **Tuesday afternoon from 1:00 – 4:00 PM** with a vendor reception following at **5:00**. It is our hope that Ms. LaFleur will be at this reception.

Conference registration for the entire conference is \$325.00 per attendee.

A one day registration is \$150 and includes meals for the day and one vendor reception.

A bus tour of Philadelphia is also planned at the end of the conference session on Thursday

Hotel registration can be made by calling the hotel directly at 215-365-4150. You MUST mention NURPA at the time you register in order to get the group room rate. You may also register on-line at: http://doubletree.hilton.com/en/dt/groups/personalized/P/PHLDADT-IUR-20160920/index.jhtml?WT.mc_id = POG for this conference.

A formal agenda is currently being assembled and will be posted as soon as it is available along with other pertinent information and registration forms.

We hope to see you in Philadelphia!

ILLEGAL HOOKUPS & HAZARDOUS CONDITIONS

By Jim Roscovich

ECO, an Exelon Company, serves the City of Philadelphia and the four surrounding counties. Its 10 member Revenue Protection Team is facing an epidemic of the most dangerous kind of Theft of Service, and that is Illegal Hookups and Hazardous Conditions.



lim Roscovich

With more and more customers unable to meet the rising cost of

utility bills and with the electric and gas service being terminated for non-payment, many customers are reverting to self-restoring the electric and/or gas service.

When talking about self-restores, the customer's either turns the electric and/or gas service back on themselves and/or they pay someone (rather than pay the utility bill) to do the job for them. Either way it is a dangerous proposition not only for the person doing the illegal restore, but also for the utility worker going back out to re-terminate and/or legally restore the service.

People doing the illegal turn ons, restores, cut ins (what ever your company calls them) ignore all the safety issues in regard to working around energized equipment; first and foremost they usually are not trained for that type of work, they do not wear any kind of PPE, and use the wrong type of equipment and materials. They are risking not only their lives, but the lives of their families, friends and neighbors as well, especially when an illegal hookup/hazard overheats, sparks and starts a fire that then spreads to other homes.

Other times they damage the equipment so badly that it winds up costing more to have a licensed electrician make repairs to bring them up to code than it would have to paid the electric bill to keep the service on.

At PECO we also have a problem when the drug addicts and squatter's hookup up the service to the PECO system illegally in abandon homes, factories, garages, etc. This is a real problem because in most of the properties the service cable, meter fitting, load cable, breaker panel and house wiring have all been stripped from the home. When the service is illegally connected it is done with little regard to safety. It is usually

jury rigged to the energized service drop with some type of wire (anything that allows the flow of electric into the property). The illegal connection (wire) is then feed through a skylight, window, door or just a hole in the wall and/or roof, usually to an unfused power strip and/or recepticle where persons can plug in an extension cord to power what they need.

Once again it is done with little respect for theirs and/or their neighbor's safety. Here are some examples of what the techs face on the streets:

- How about the person who took a large size fish hook, jammed the hook to one live leg of the service drop, attached a piece of # 10 wire to the hook, ran the wire to his breaker panel and provided electrical service to his property.
- Or the property where the service is terminated at the weather head, someone from that property just strolls on down to the nearest auto supply store, buys a set of battery jumper cables attaches 5 inch long flat pieces of wood to the handles of the battery jumpers (as to not get shocked) and connects them to the cut wires to re-energize the service.
- The customer, whose service was terminated at the meter, cut the security locks off, smashed and removed the meter then the fitting cover. He hammered and welded four pieces of 2 inch copper pipe into the shape of the letter "T" (he made two of them) then welded two four inch flat head screwdrivers to the "T's". Took his homemade jumpers and jammed them into the fitting's clips to energize the service 240volts.
- The person whose service was terminated at the weather head, pigtails the wires back together. Rev Pro Tech goes to the property, knocks on the front door, young woman comes to the door and tells the tech the service is still off. Car batteries are running the two window air conditioning units that are on at the property. her boyfriend hooked them up states the young woman. The tech explains he still has to cut the wires and presto when he does the cut, off go the AC units. Tech leaves the property followed by a flurry of curses from the young woman.
- A heavy-duty extension cord is attached to the service drop 120 volts and feeds into the 2nd floor window of a property. Techs arrive at the property to remove said extension cord; they

(Continued on page 16)

cut the cord from the drop. Techs then start pulling the cord from the window when a tug of war ensues with someone in the property over the extension cord. Next thing you know out comes the bottom half of the window crashing onto the ground, almost followed a middle age man who was fighting for the cord. Needless to say, he gave up the cord to the techs.

Listed below are some of the Illegal Hookups/Hazards that the techs face in the field on a daily basis:

- 1. Open energized meter fitting (no fitting cover and/or meter) with line to load jumpers such as knives, screws, nails, spoons, pieces of soda cans, fish hooks, screwdrivers and/or any other piece of conductive material they can get their hands on to provide electrical service to their property
- 2. Open energized meter fitting (no fitting cover and/or meter) with battery jumper cables, lamp cord wire, romex, Bell Telephone wire, extension cords attached to the line side of the fitting and feeding directly into the property to provide electrical service
- 3. Foreign wire (battery jumper cables, romex, lamp cord wire Bell Telephone wire, extension cords) attached to the energized PECO service drop, wire feeds into the property to provide electrical service.
- 4. Foreign wire (battery jumper cables, romex, lamp cord wire, Bell Telephone wire, extension cords) attached to an energized and authorized City of Philadelphia alley light and/or street light, feeding the wire off the light, into the property to provide service (how about removing the light bulb from the alley light, place a empty tin can on the light sensor, then screw in a female recepticle into the light ferrule, plug in an extension cord, run the cord to the property and viola free electric service).
- 5. Service is cut at the weather head, someone other than PECO personnel remakes the wires at the weather head, where the wires can be hooked together, twisted together, push together, held together with clothes pins, vise grips, C-clamps, radiator clamps, alligator clamps from battery cables, Roach clips, water ground clamps, and all kinds of tape from Scotch to Duct.

- 6. The service drop to the property is cut at the mid-span where it is feed from the secondary line. The customer and/or someone other than a PECO personal put a ladder (does not matter if is wood, aluminum, and/or fiber glass) up against the energized secondary span, climbs up with a cutting tool, peels back the insulation at the service drop & secondary to re-energize the service to the property. (We have video, taken by a neighbor, of a customer throwing an aluminum ladder against the energized secondary, climbing the ladder, no PPE on, skinning back the insulation with a switchblade, causing numerous flashes and arcs when he was hooking up the service with battery jumper cables. Later that day there was a flash at the illegal connection that started a fire and burned down three row houses. Customer got five years in jail for risking a catastrophe.
- 7. Customer's service is terminated at the meter fitting. Customer and/or someone who is paid by the customer to turn the service back on may use the following methods
- a. Meter is in the fitting, the shut off sleeves have been removed (locking devices have been cut and/or pried off to access the meter), then the meter's test latch is open, stopping the meter from registering, providing unmetered service to the property.
- b. Meter is in the fitting with shut off sleeves on the meter (locking device has been cut and/or pried off to access the meter), and then some sort of conductive material is jammed into the fittings clips (line to load, one polarity and/or both polarities of the fitting). Meter will not register; service is unmetered to the property.

These are just some of the hazards faced by PECO personal during the course of the workday. Revenue Protection Techs here at PECO are busy with illegal hookups/hazardous conditions; we have three-bucket trucks manned by Revenue Protection Techs eliminating those conditions. Safety though is the main concern for eliminating these hazards for the protection of the customer, employees, first responders and the distribution system.

MINING DATA AND COMBATING ELECTRICITY THEFT

By Itzick Michaeli, Retired Israel Electric Revenue Protection Manager

srael Electric Corporation (IEC) estimates, that the annual rate of electricity theft reaches approximately 1% of total Low Voltage electricity sales. The financial volume of electricity theft is estimated at 50 million US dollars annually. In addition, beside the various



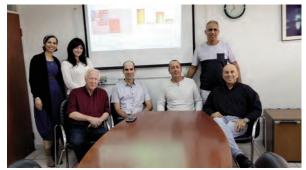
Itzick Michaeli Israel Electric (Retired)

known motives to steal electricity, the methods of thefts became during the recent years, more and more sophisticated, and much more difficult to detect.

Depending on IEC Customers Division requirements, the company's Information & Communication Division has developed an innovative and sophisticated Data Mining system, targeting at detection and prevention of thefts of electricity. The system was named ETDM – Electricity Theft Data Mining. ETDM assists the Revenue Protection experts, in identifying, prioritizing, solving and managing the RP unit's workflow..

Shai Cohen, is the new IEC Revenue Protection manager. Shay, a former intelligence officer in the Israeli Army, replaced Itzick Michaeli that retired 6 months ago. Shay, which led the ETDM idea from Day One explains: "The ETDM was developed according to the needs and requirements of the users, in order to broaden and deepen the field intelligence system. The idea was to try and expose theft of electricity as close as possible to the day it started, in order to reduce the amount of theft, and also improve the RP investigators workflow ".

Avner Lahat, director at the company's Information & Communication Division and manager of the ETDM project: "IEC invests numerous efforts and resources in identifying, treatment, enforcement and deterrence regarding theft of electricity. The ETDM provides technological solutions and support complex issues. It streamlines and focuses



Israel Electric ETDM Team

on processes, assists in locating electricity theft and saving a huge amount of needed resources".

The development process was very intense and demanded a close cooperation between all the project stakeholders, high personal abilities of the developers, study and characterization, while introducing innovative tools and many pressed deadlines".

The ETDM makes use of all IEC available databases, including known cases of electricity theft, and combines statistical models, decision rules and information, in order to point out various directions and leads to the RP investigators. One of the strongest tools of the ETDM, is its outstanding ability to create "Family Ties" and connect any exposed theft case to other possible cases at other customer's facilities.

The system has been defined, developed and operated within a year, while using existing software and new SAS environment. The ETDM is an innovative system that integrates intelligence capabilities with BI - Business Intelligence.

ETDM first version was implemented in August 2015, and recently the process of training and integration among researchers was completed.

During the development stages, the ETDM exposed more than 100 cases of theft of electricity that recovered nearly \$ 600,000.

Shay Cohen sums: "Although the ETDM capabilities are already impressive, the contents of the system in its first version, is only about 10% of the potential final capabilities, and we continue to push the development forward and constantly improve the system".

Ed Holmes 1940 - 2016



Ed was born in Dover, New Jersey on January 29, 1940 and grew up in Netcong where he graduated from Netcong High School. He moved to Landing in 1964. Ed served in the US Army and New Jersey National Guard from 1961-1968. He was also a long time member of the American Legion.

In 1959 Ed began his career at Jersey Central Power & Light in Line Construction and Maintenance and in 1963 became a Meter Repair & Test Technician where he obtained much of his metering background for the next nine years. From 1972 to 1982 Ed moved to Customer Accounts as a Supervisor and then became District Business Manager. Ed established the Revenue Protection Department at JCP&L in 1982 where he remained until he retired in August 1996 as Manager of Revenue Protection Services. Ed then joined Arnett Consulting Services in 1998 as their Senior Consultant and taught and trained utility company personnel throughout the world in revenue protection. In 1990, Ed became the first Chairperson of

The International Utilities Revenue Protection Association and remained a member of The Board of Directors until his passing. Ed was also a past Chairperson and member of The Board of Directors of the Northeast Utilities Revenue Protection Association. Ed was very instrumental in assisting both Boards throughout his tenure. He was held in high regard by many in the utility industry and valued for his assistance and training to many of us involved in revenue protection throughout the years.

Ed was predeceased by his wife of 35 years Gloria (Miller) Holmes in 1997 and is survived by a sister, Patricia (Holmes) Miller of Ledgewood, 10 nieces and nephews and several great nieces and nephews.

We were saddened to hear that Ed passed away on Tuesday February 2, 2016. He will be truly missed by many of those whom he touched. Now, beginning in its 26th year, IURPA wishes to dedicate this issue to Ed Holmes.

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IURPA • 26 Years

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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