

### Revenue Protection





#### **About us**

- The largest of the five electric utilities that make up the Southern Company.
- Serve customers in 57,000 of the state's 59,000 square miles.
- The company's 2.5 million customers are in all but six of Georgia's 159 counties.
- Operating revenues for 2010 were \$8.35 Billion
- Georgia Power has nearly 8000 employees throughout the state.





# Questions







### REVENUE PROTECTION





### Cases Closed - 2006

14,052







## Cases Closed - 2011

21,958







# TOTAL IDENTIFIED REVENUE 2011

\$11,996,494







#### Ratio of Combined vs. Cost

8:1









Revenue Protection

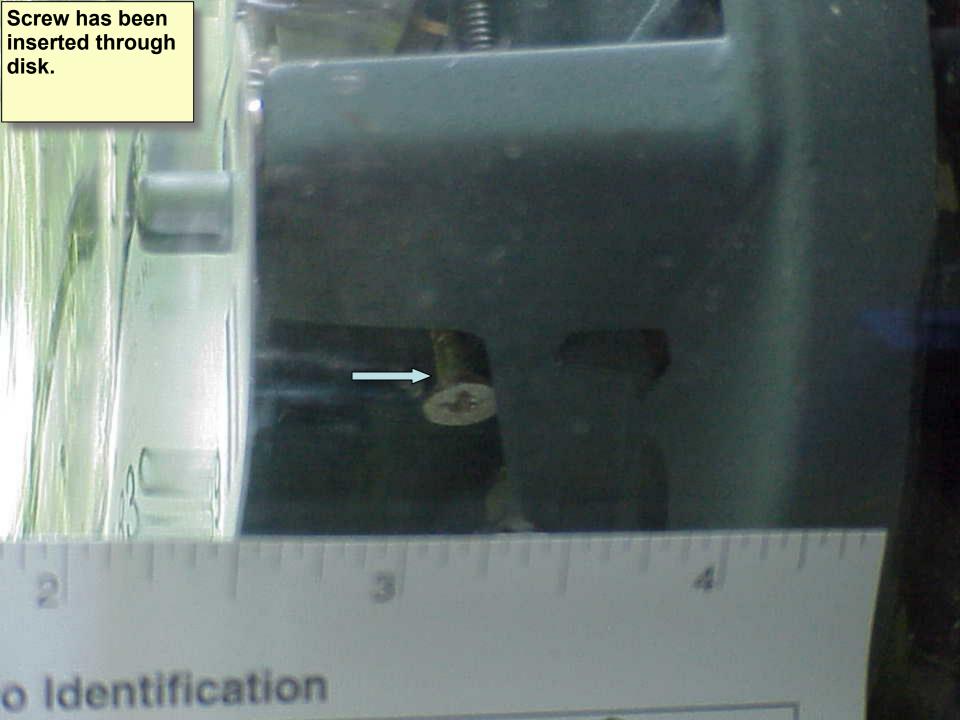
# EXAMPLES OF CURRENT DIVERSION



A SOUTHERN COMPANY











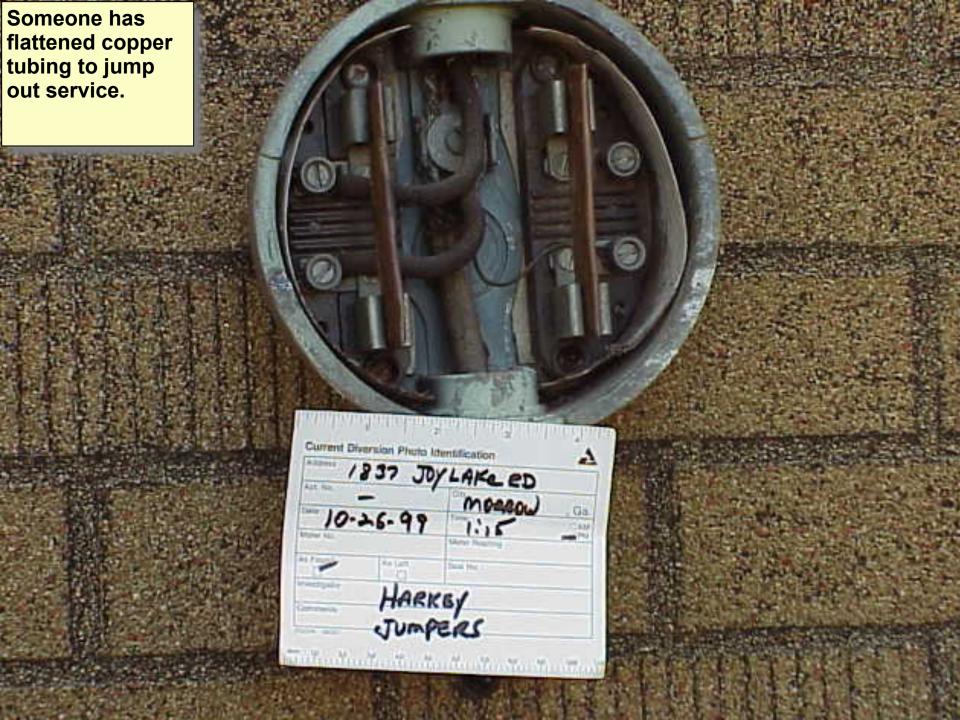


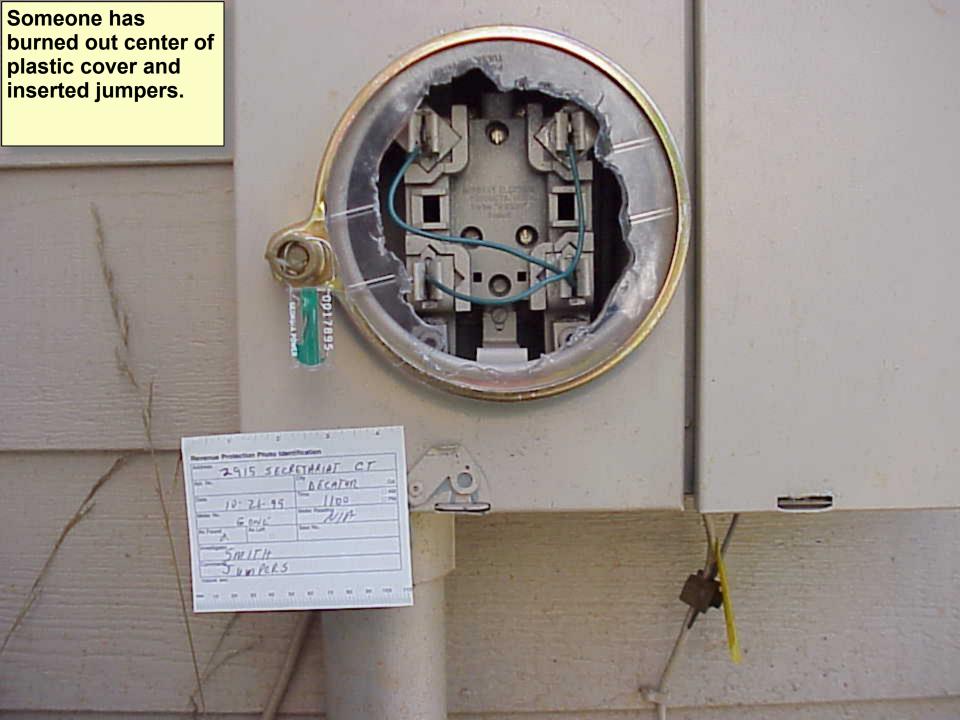














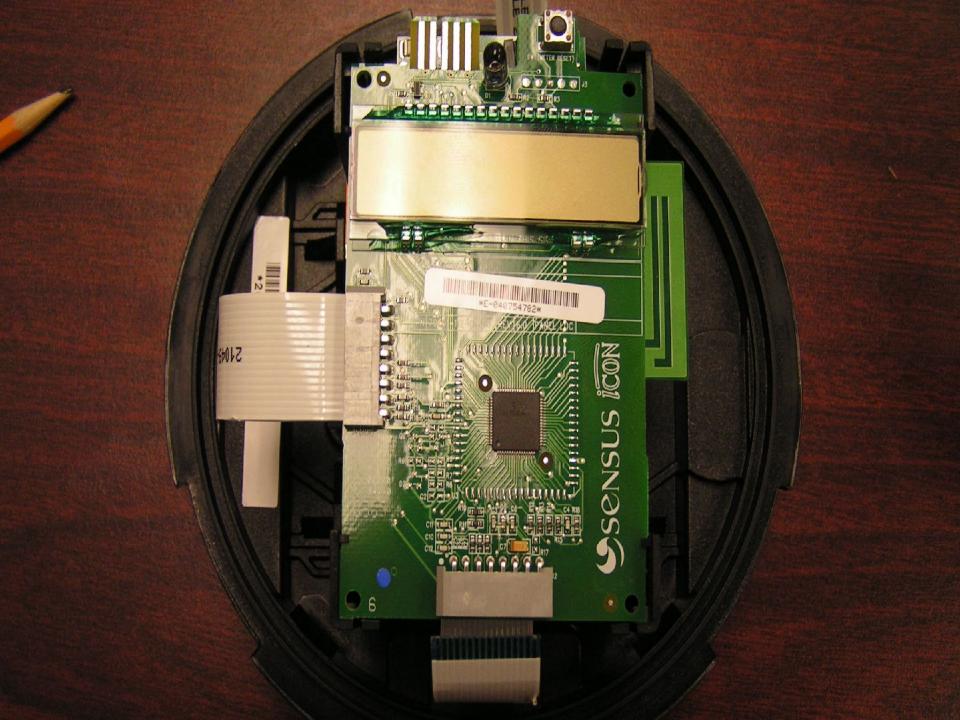






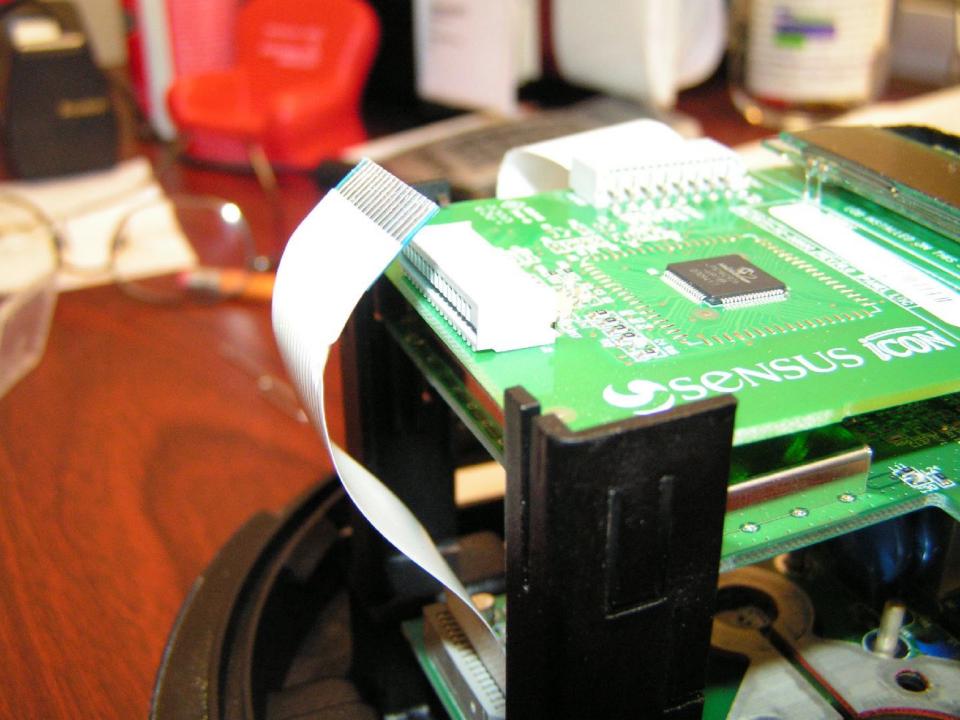


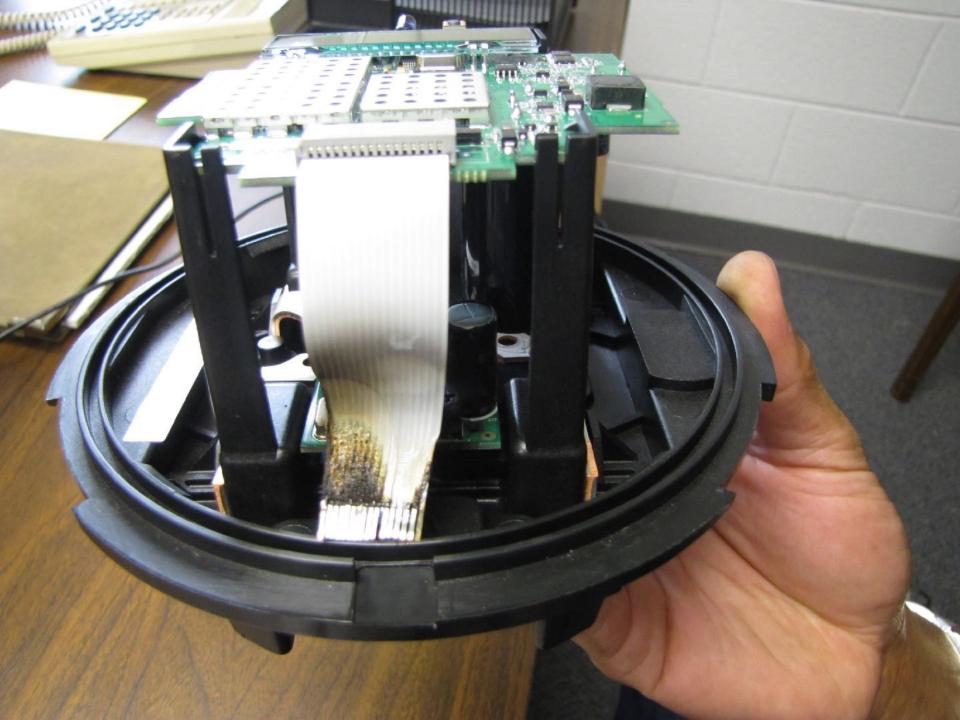


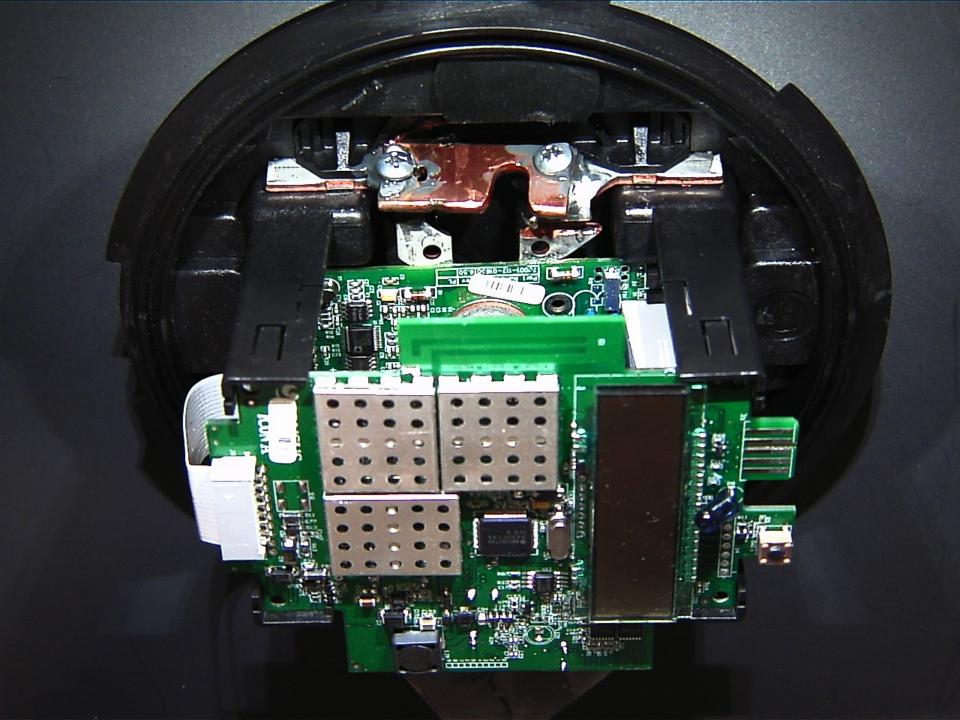


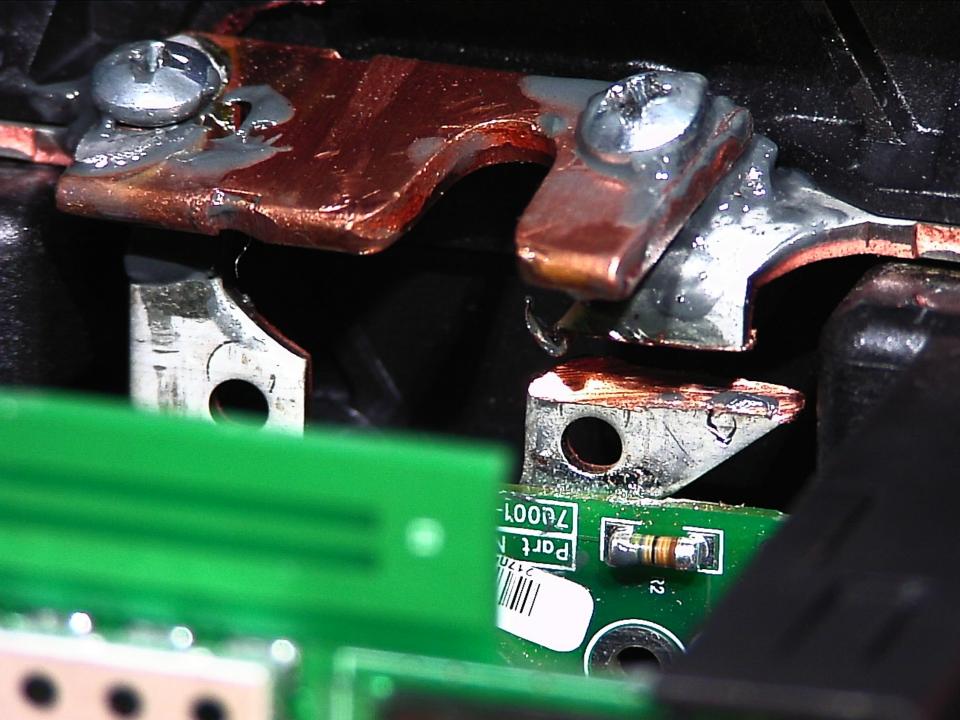




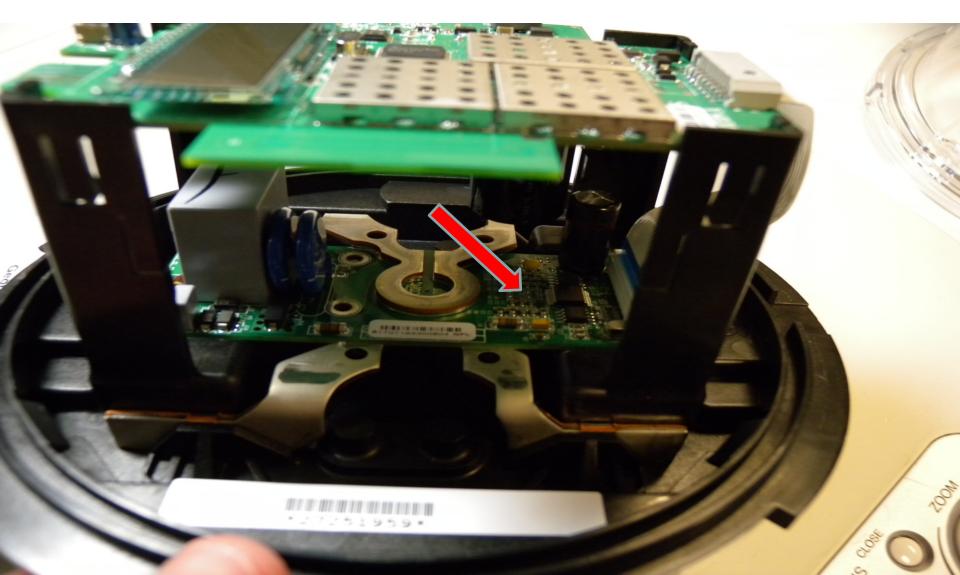




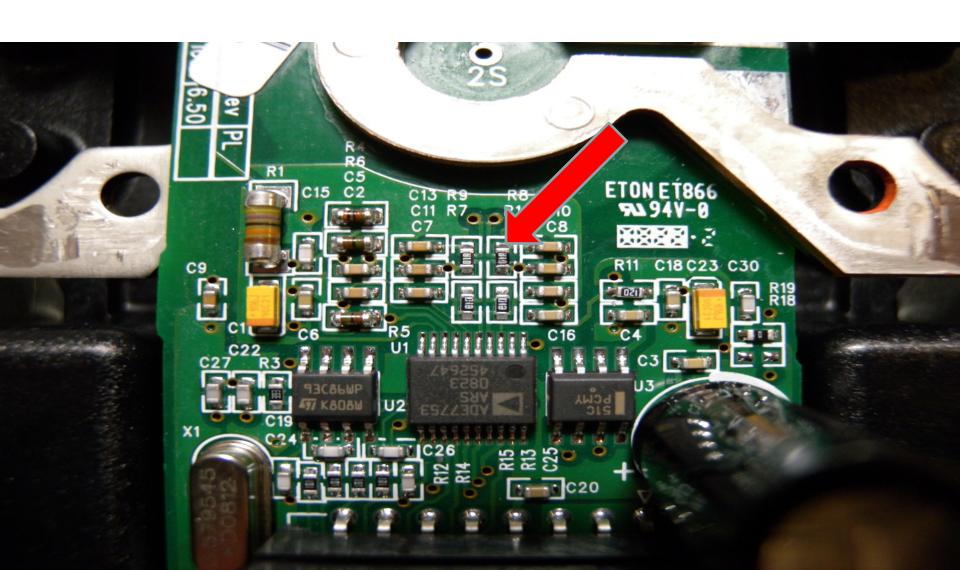




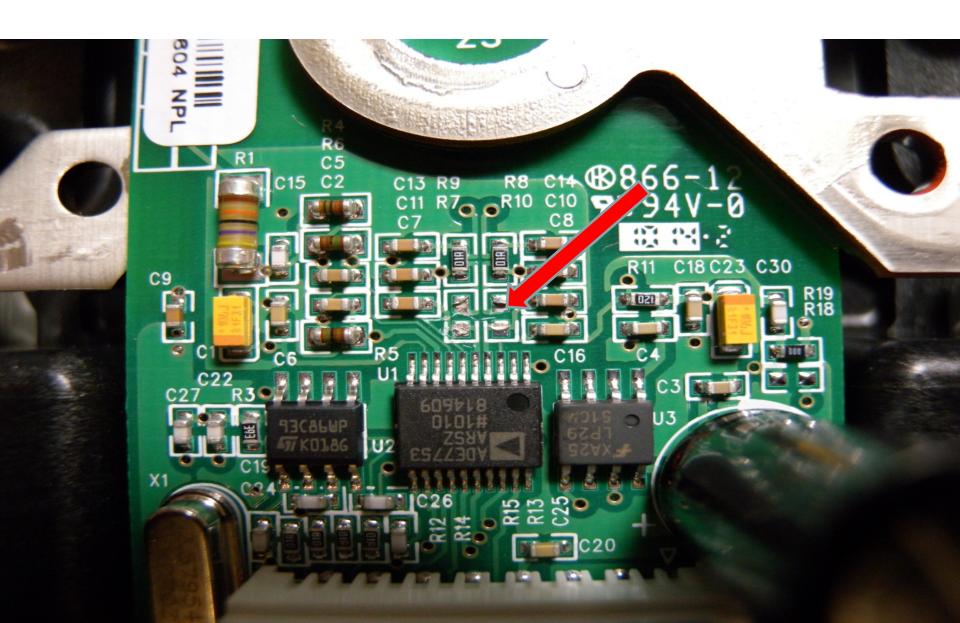
### Sensus 2S - Measurement Board



### Sensus 2S meter - Normal condition



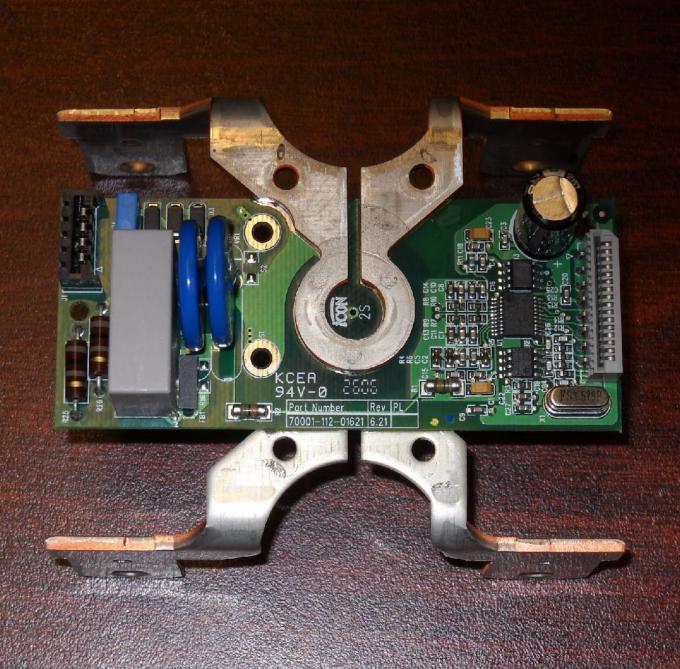
## Sensus 2S with resistors removed



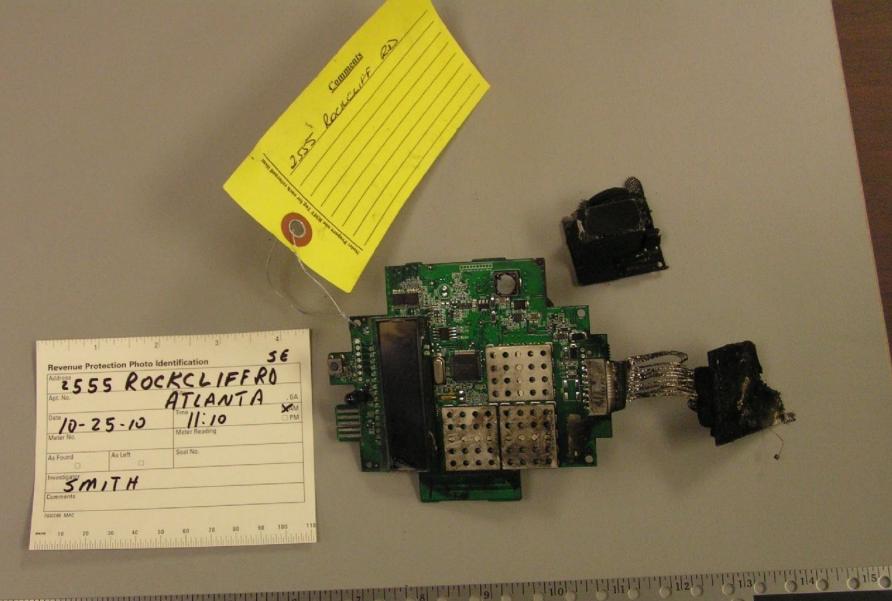






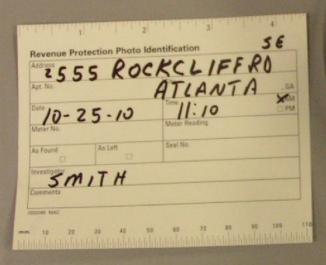




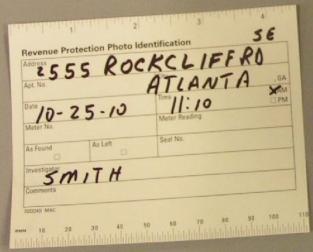


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10.25.2010









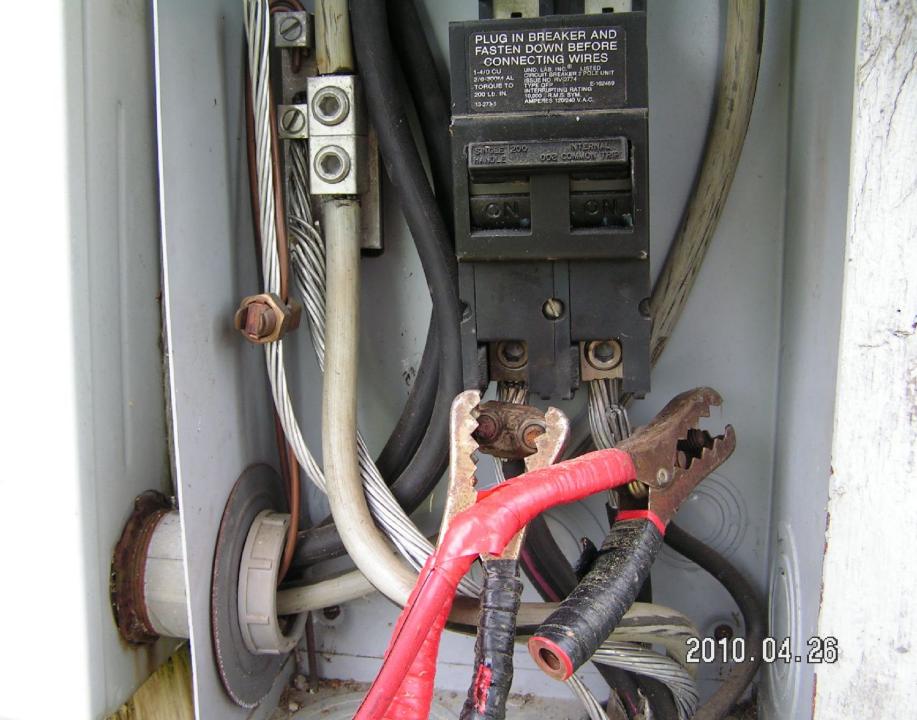






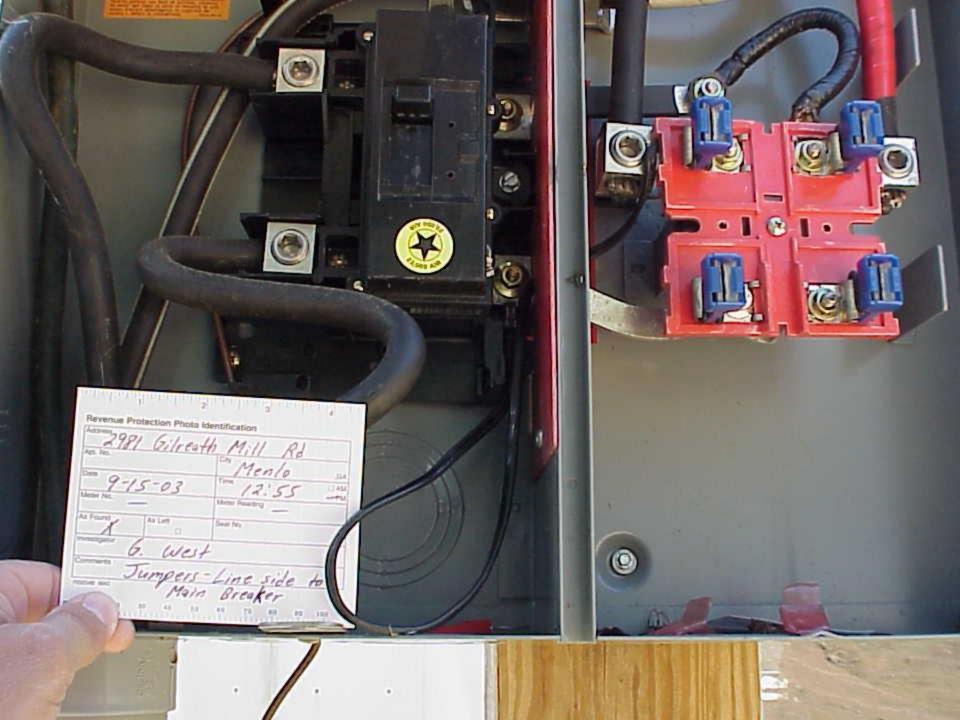


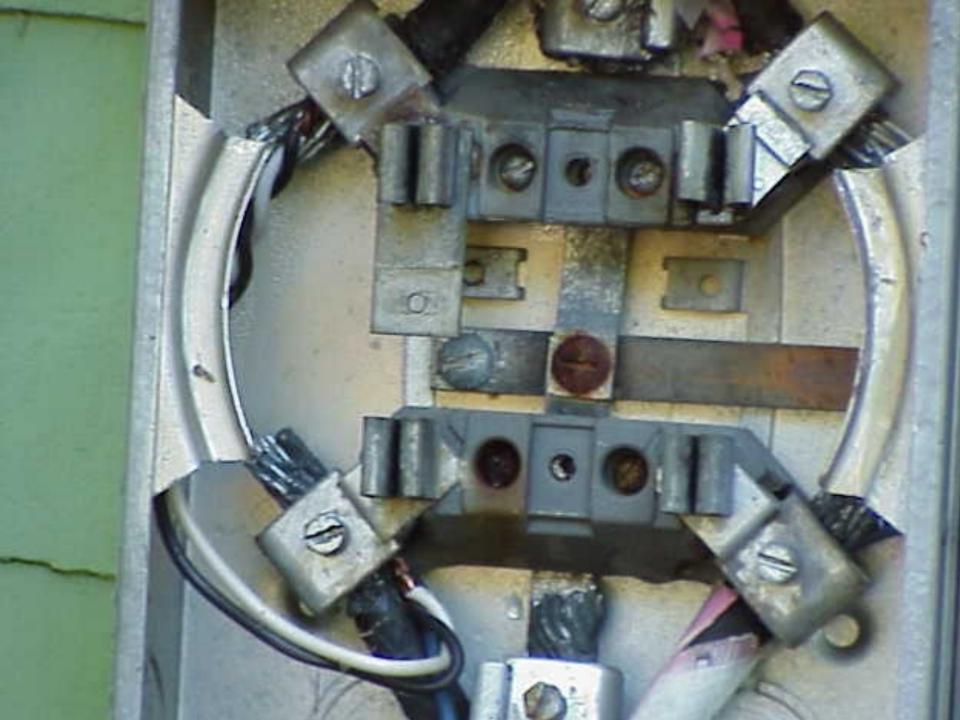


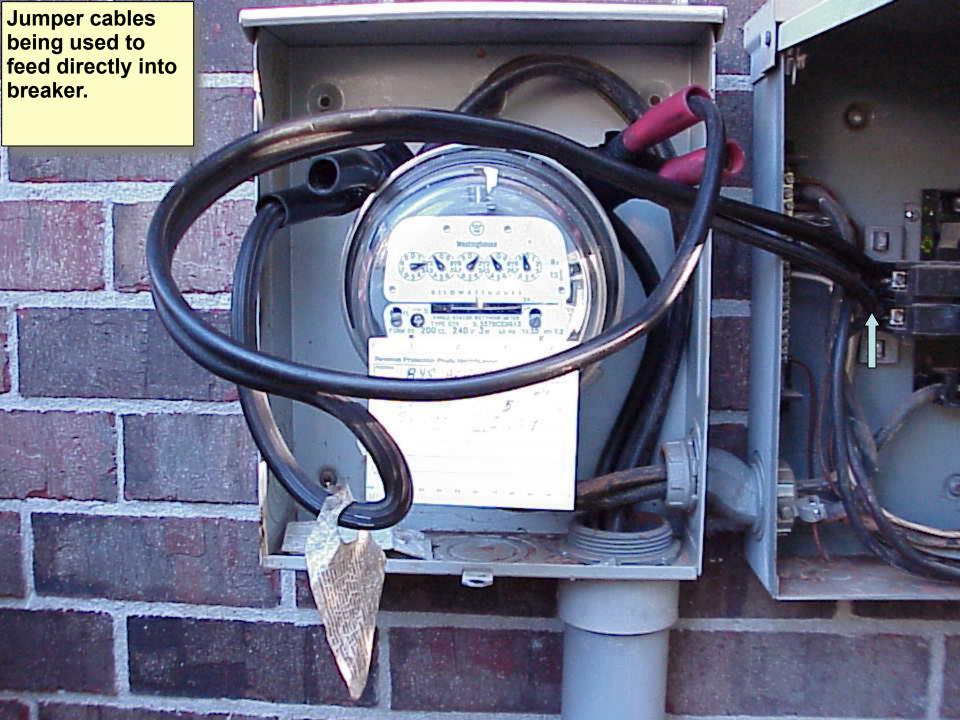


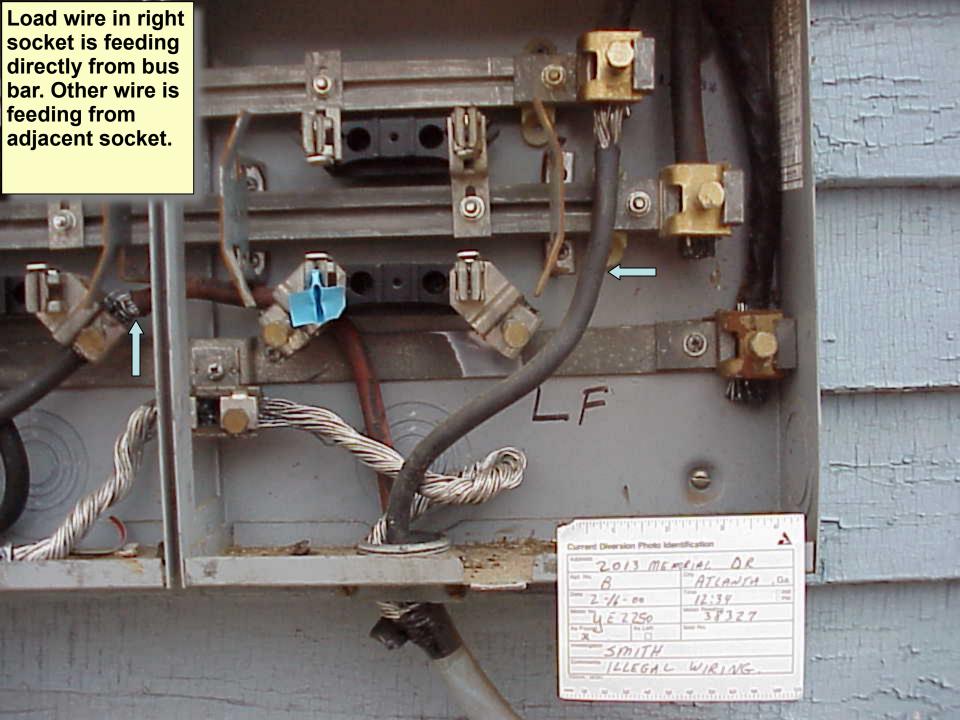


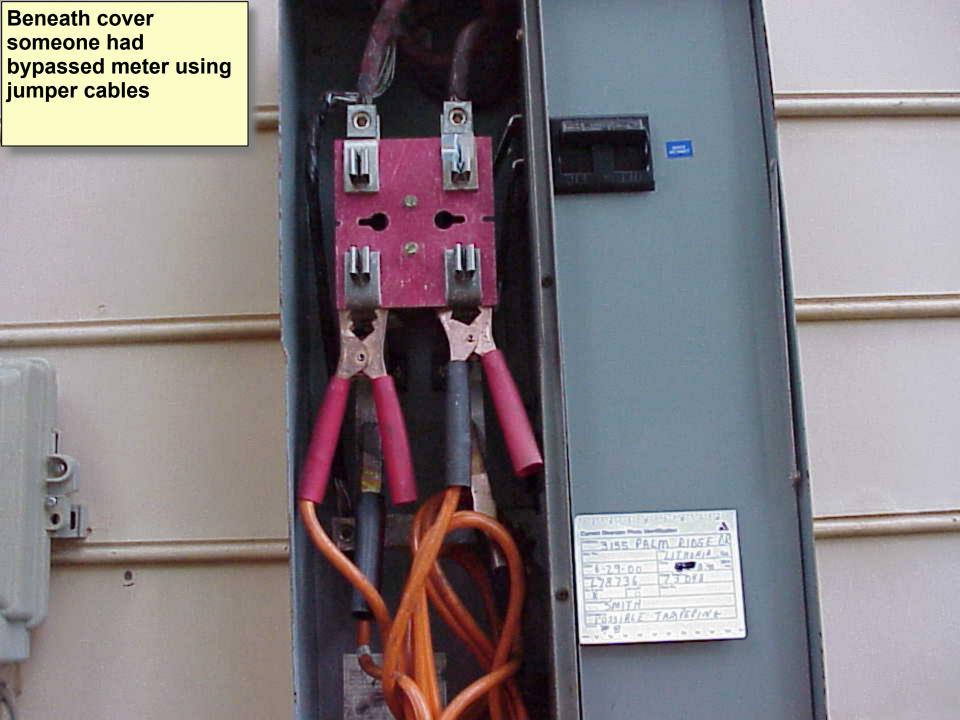








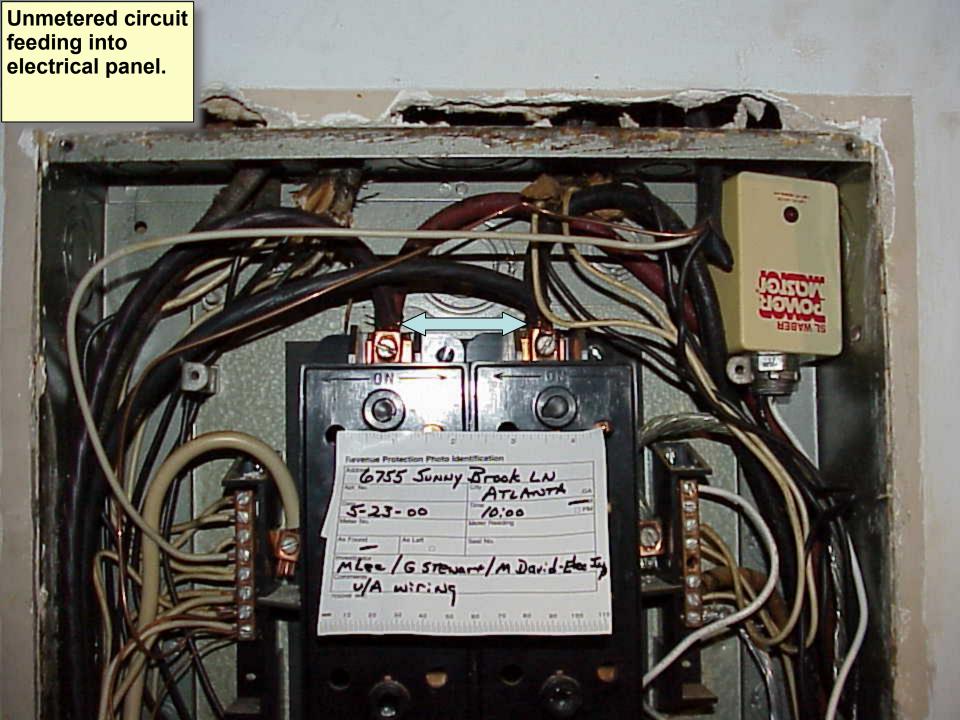


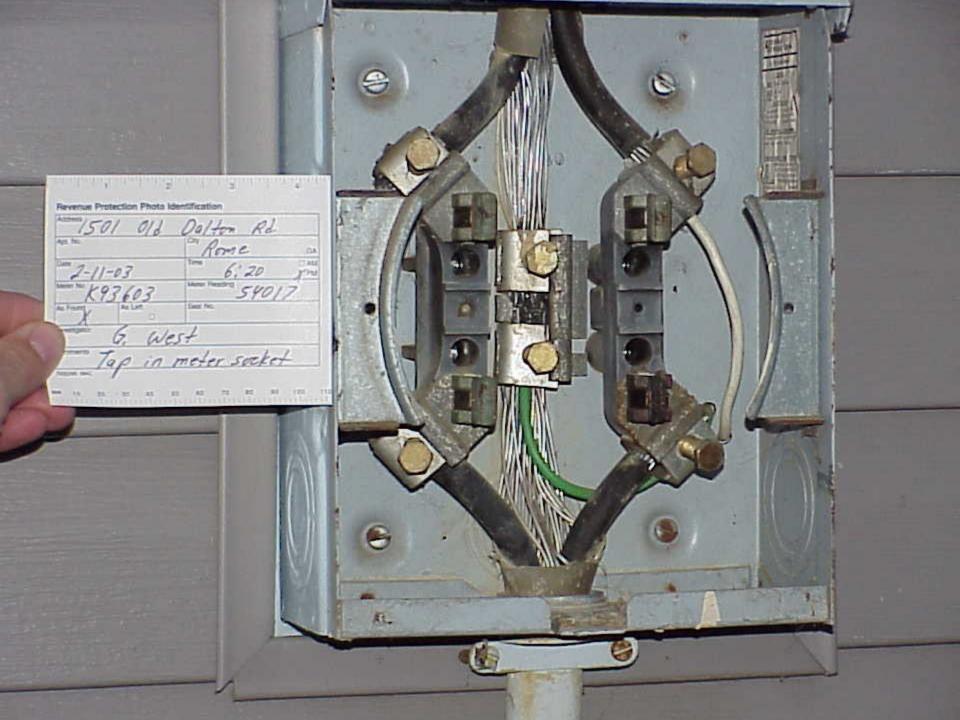










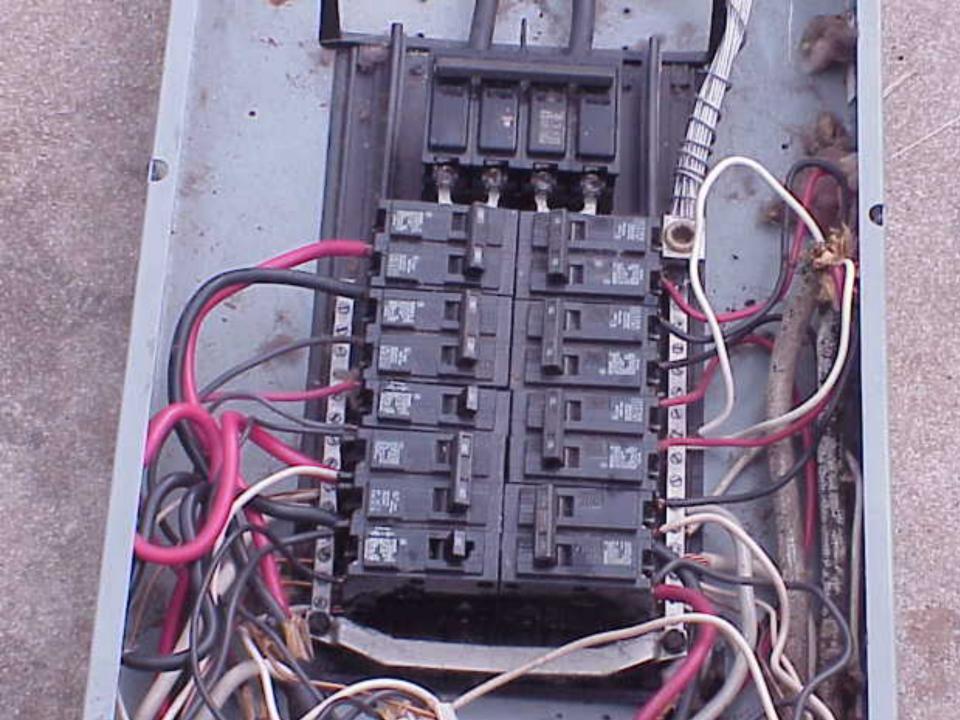


















## LOOKS LIKE YOUR AVERAGE, MIDDLE INCOME NIEGHBORHOOD HOME, RIGHT?

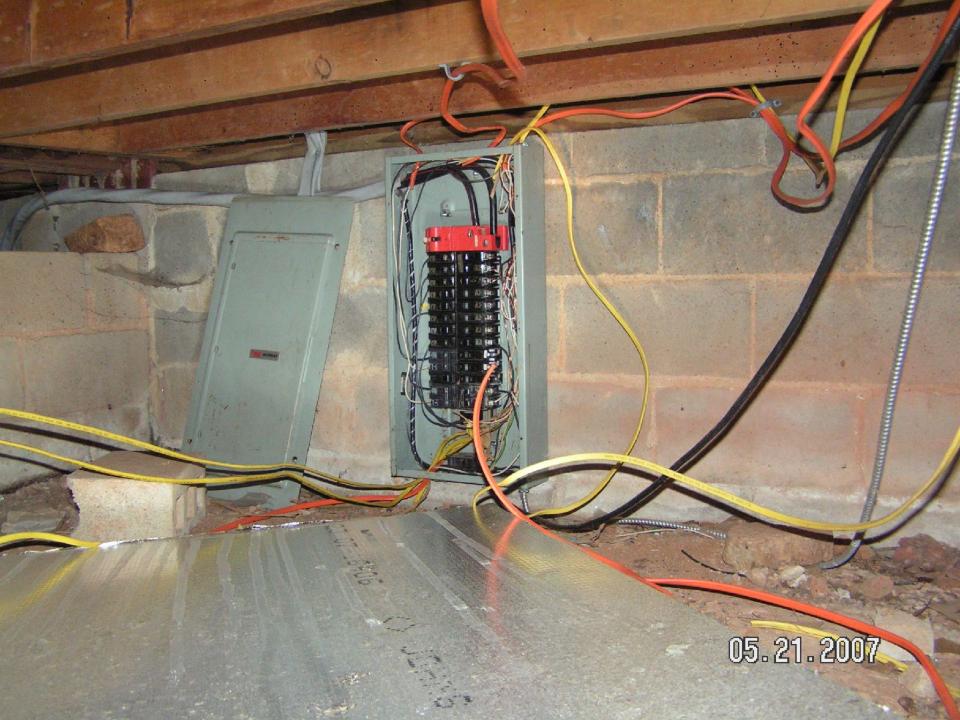










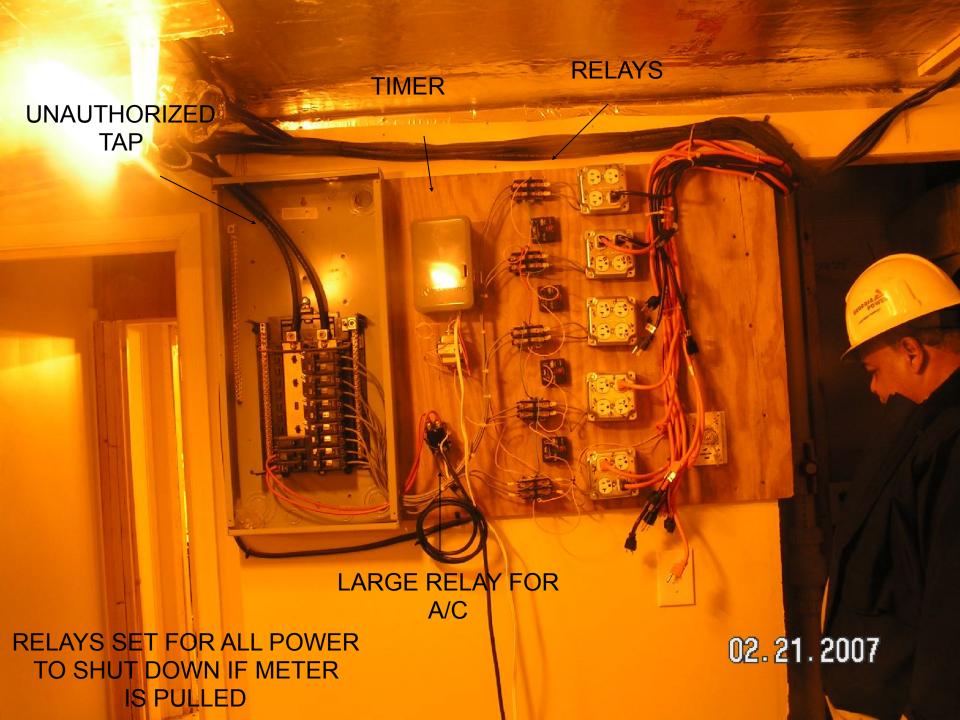














#### The New Face of AMI Cases

- Data Mining
  - Finding patterns in very large data sets
- System generated event charts
- System generated load reading graphs
- Investigator developed cases







#### A weekly cycle of Meter Swapping



Alarm Da	ate Meter Id	FlexNet Id	Address
PowerFail Tamper	5/31/2011 8:00	4309707	44803263 Unknown location
Power Restoral	5/31/2011 8:02	4533871	44344741 1408 RED-CLOUD CT
Power Restoral	5/31/2011 8:02	4533871	44344741 1408 RED-CLOUD CT
Power Restoral	5/31/2011 8:03	4533871	44344741 1408 RED-CLOUD CT
Power Restoral	5/31/2011 8:03	4533871	44344741 1408 RED-CLOUD CT
Power Restoral	5/31/2011 8:04	4533871	44344741 1408 RED-CLOUD CT
Power Restoral	5/31/2011 8:05	4533871	44344741 1408 RED-CLOUD CT
PowerFail Tamper	6/6/2011 7:16	4309707	44803263 Unknown location
Power Restoral	6/6/2011 7:18	4533871	44344741 1408 RED-CLOUD CT
Power Restoral	6/6/2011 7:18	4533871	44344741 1408 RED-CLOUD CT
Power Restoral	6/6/2011 7:18	4533871	44344741 1408 RED-CLOUD CT
Power Restoral	6/6/2011 7:19	4533871	44344741 1408 RED-CLOUD CT
Power Restoral	6/6/2011 7:20	4533871	44344741 1408 RED-CLOUD CT
Power Restoral	6/6/2011 7:21	4533871	44344741 1408 RED-CLOUD CT
PowerFail Tamper	6/20/2011 9:23	4309707	44803263 Unknown location
Power Restoral	6/20/2011 9:24	4533871	44344741 1408 RED-CLOUD CT
Power Restoral	6/20/2011 9:24	4533871	44344741 1408 RED-CLOUD CT
Power Restoral	6/20/2011 9:25	4533871	44344741 1408 RED-CLOUD CT
Power Restoral	6/20/2011 9:25	4533871	44344741 1408 RED-CLOUD CT
Power Restoral	6/20/2011 9:26	4533871	44344741 1408 RED-CLOUD CT
Power Restoral	6/20/2011 9:27	4533871	44344741 1408 RED-CLOUD CT
PowerFail Tamper	7/5/2011 8:17	4309707	44803263 Unknown location
Power Restoral	7/5/2011 8:19	4533871	44344741 1408 RED-CLOUD CT
Power Restoral	7/5/2011 8:19	4533871	44344741 1408 RED-CLOUD CT
Power Restoral	7/5/2011 8:20	4533871	44344741 1408 RED-CLOUD CT
Power Restoral	7/5/2011 8:20	4533871	44344741 1408 RED-CLOUD CT
Power Restoral	7/5/2011 8:21	4533871	44344741 1408 RED-CLOUD CT
Power Restoral	7/5/2011 8:22	4533871	44344741 1408 RED-CLOUD CT
PowerFail Tamper	7/12/2011 7:39	4309707	44803263 Unknown location
Power Restoral	7/12/2011 7:40	4533871	44344741 1408 RED-CLOUD CT
Power Restoral	7/12/2011 7:40	4533871	44344741 1408 RED-CLOUD CT
Power Restoral	7/12/2011 7:41	4533871	44344741 1408 RED-CLOUD CT
Power Restoral	7/12/2011 7:41	4533871	44344741 1408 RED-CLOUD CT
Power Restoral	7/12/2011 7:42	4533871	44344741 1408 RED-CLOUD CT
Power Restoral	7/12/2011 7:43	4533871	44344741 1408 RED-CLOUD CT









#### **Alarm Event Documentation**

Alarm	Date	Meter Id	FlexNet Id	Address
PowerFail Tamper	5/31/2011 8:00	4309707	44803263	Unknown location
Power Restoral	5/31/2011 8:02	4533871	44344741	1408 RED-CLOUD CT
Power Restoral	5/31/2011 8:02	4533871	44344741	1408 RED-CLOUD CT
Power Restoral	5/31/2011 8:03	4533871	44344741	1408 RED-CLOUD CT
Power Restoral	5/31/2011 8:03	4533871	44344741	1408 RED-CLOUD CT
Power Restoral	5/31/2011 8:04	4533871	44344741	1408 RED-CLOUD CT
Power Restoral	5/31/2011 8:05	4533871	44344741	1408 RED-CLOUD CT
PowerFail Tamper	6/6/2011 7:16	4309707	44803263	Unknown location
Power Restoral	6/6/2011 7:18	4533871	44344741	1408 RED-CLOUD CT
Power Restoral	6/6/2011 7:18	4533871	44344741	1408 RED-CLOUD CT
Power Restoral	6/6/2011 7:18	4533871	44344741	1408 RED-CLOUD CT
Power Restoral	6/6/2011 7:19	4533871	44344741	1408 RED-CLOUD CT
Power Restoral	6/6/2011 7:20	4533871	44344741	1408 RED-CLOUD CT
Power Restoral	6/6/2011 7:21	4533871	44344741	1408 RED-CLOUD CT

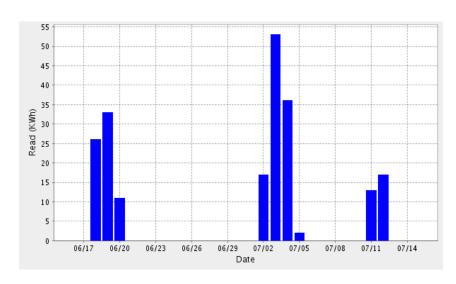


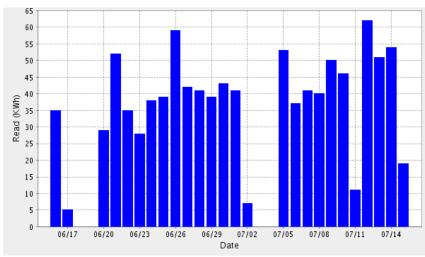


# **Reading Chart Documentation**

4309707 (unauthorized meter) 6/16/2011 – 7/15/2011

4533871 (meter of record) 6/16/2011 – 7/15/2011











#### A daily cycle of Meter Swapping



### **Alarm Event Documentation**

Alarm	Date	Meter Id	FlexNet Id	Address
PowerFail Tamper	7/18/2011 9:00	4086536	43973204	Unknown location
Power Restoral	7/18/2011 9:02	5801956	44344741	1037 Holcombe RD, APT B
PowerFail Tamper	7/15/2011 8:15	4086536	43973204	Unknown location
Power Restoral	7/15/2011 8:16	5801956	44344741	1037 Holcombe RD, APT B
PowerFail Tamper	7/14/2011 5:06	4086536	43973204	Unknown location
Power Restoral	7/14/2011 5:09	5801956	44344741	1037 Holcombe RD, APT B

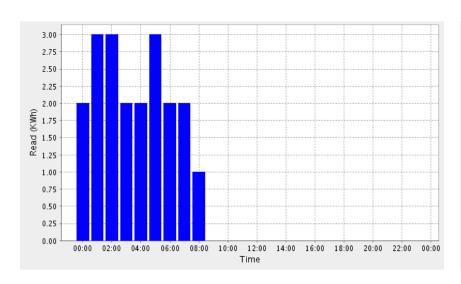


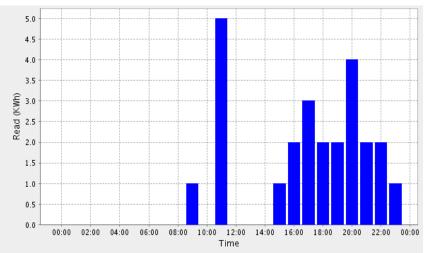


# **Reading Chart Documentation**

Unauthorized meter 4086536 7/18/2011

Meter of record 5801956 7/18/2011







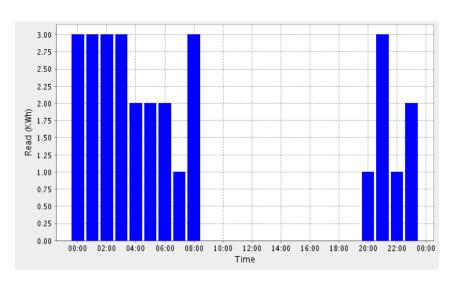


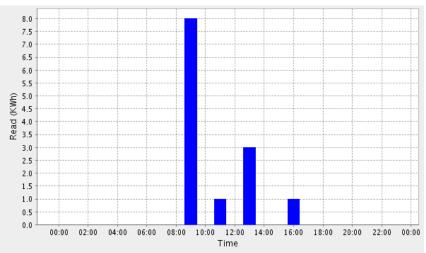


## **Reading Chart Documentation**

Unauthorized meter 4086536 7/15/2011

M eter of record 5801956 7/15/2011













#### **Duration of Theft**



#### **Alarm Event Documentation**

#### Meter 4015427 alarm log

2011-07-05 19:11:13 PowerFail Tamper ← meter removed from address of record

2011-07-06 01:54:53 PowerRestore ← meter activated

2011-07-06 01:55:25 PowerRestore

2011-07-06 01:56:05 PowerRestore

2011-07-06 01:57:01 PowerRestore

2011-07-06 01:58:05 PowerRestore

2011-07-06 01:59:01 PowerRestore

2011-08-22 14:57:09 PowerFail Tamper ← meter removed from service at 406 Holderness St SW by Georgia Power investigators Hagan and Howard

2011-08-22 14:57:09 PowerFail Tamper

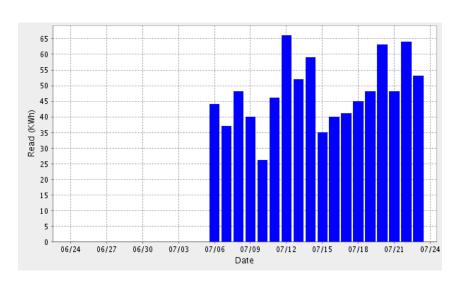


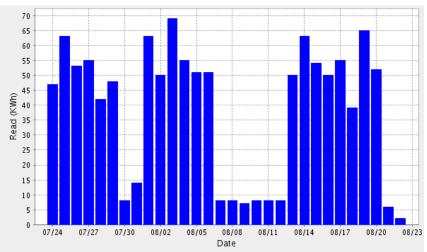




# **Reading Chart Documentation**

Unauthorized meter 4015427 – 7/5/11 through 8/22/11







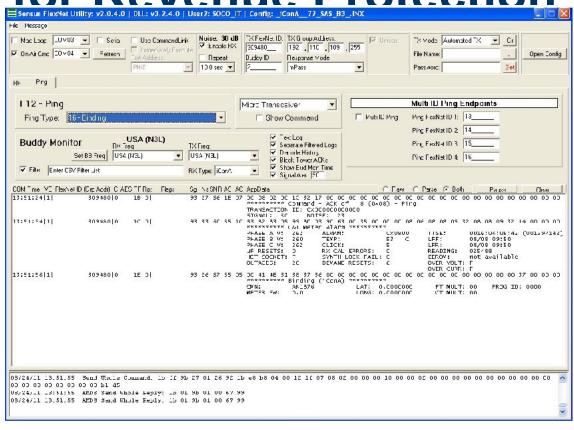




New Tools for Revenue Protection

Field Meter Tech Service Tools

GENERAL @ ELECTRIC

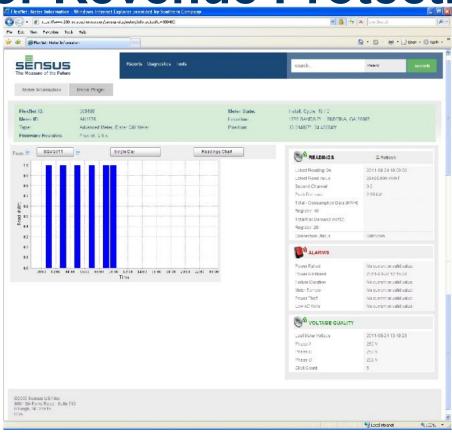






### **New Tools for Revenue Protection**

Web Based Tools

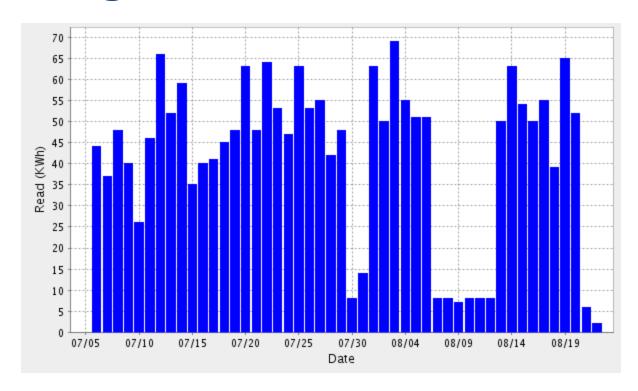




GENERAL @ ELECTRIC



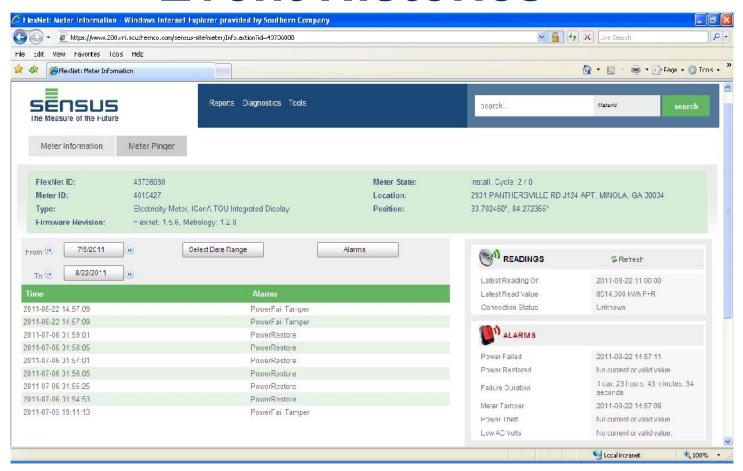
# **Reading Charts**







#### **Event Histories**





GENERAL @ ELECTRIC



**Summary Screens** 

(S) READINGS	Refresh
Latest Reading On	2011-08-26 16:00:00
Latest Read Value	29794.000 kWh F+R
Connection Status	Unknown
(a)	
) ALARMS	
Power Failed	2011-07-16 09:48:17
Power Restored	2011-07-18 07:57:08
Failure Duration	1 day, 22 hours, 8 minutes, 51 seconds
Meter Tamper	2011-07-16 09:48:17
Power Theft	No current or valid value.
Low AC Volts	No current or valid value.
(Sa)	
(NOLTAGE QUALI	ΤΥ
Last Meter Voltage	2011-08-26 16:00:00
Average	246 V
Minimum	244 V
Maximum	248 V
Click Count	22





# **Ping From Your Desk**

#### Results received

FlexNet ID: 44344741 | New Ping Back to Meter Information Page

Initial Response	1	End Time	Two Way Duration
00:00:00	08/26/2011 20:57:49	08/26/2011 20:57:55	00:00:06

Current E1 Reading	Current E2 Reading	Timestamp	Phase C Current Voltage	Phase C Minimum Voltage	Phase C Maximum Voltage
29808.952 kWh	0 kWh	2011-08-26T20:57:55.200-04:00	248 V	V	V

Timestamp	Message Type	Message Summary
08/26/2011 20:57:55	STATUS	State: COMPLETE; Attempt #1 of 1 (via Austell); Expecting: 0x ALARM
08/26/2011 20:57:54	STATUS	State: WAITING
08/26/2011 20:57:54	STATUS	State: WAITING; Attempt #1 of 10 (via Austell)
08/26/2011 20:57:51	STATUS	State: TRANSMIT
08/26/2011 20:57:51	STATUS	State: CONFIRM; Attempt #0 of 10; Expecting: 1x ALARM
08/26/2011 20:57:49	STATUS	State: WAITING



GENERAL @ ELECTRIC





#### **Lost/Stolen Meters**



A SOUTHERN COMPANY



# **MeterTrax** TM

The Industries First AMI / AMR / Smart Meter Location System



#### **Product Attributes**

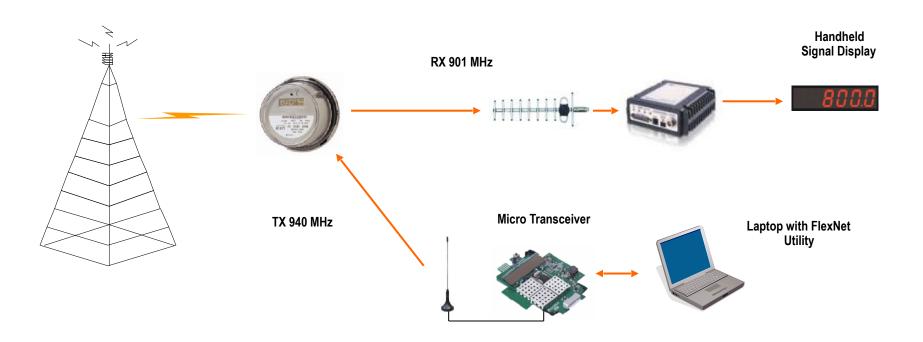
- Support for a wide range of systems
- Patent pending technology requires no changes to the meters or the metering infrastructure
- Increases investigator effectiveness
  - Recover AMI / AMR / SmartMeters quicker
- Increases investigator safety
  - Through increased location accuracy







# The MeterTrax™ System









# The MeterTrax™ System









# **Example Case - Sensus**



FlexNet ID 99942805

Meter ID 8372963

Start survey at: 2431 Cali Drive NE

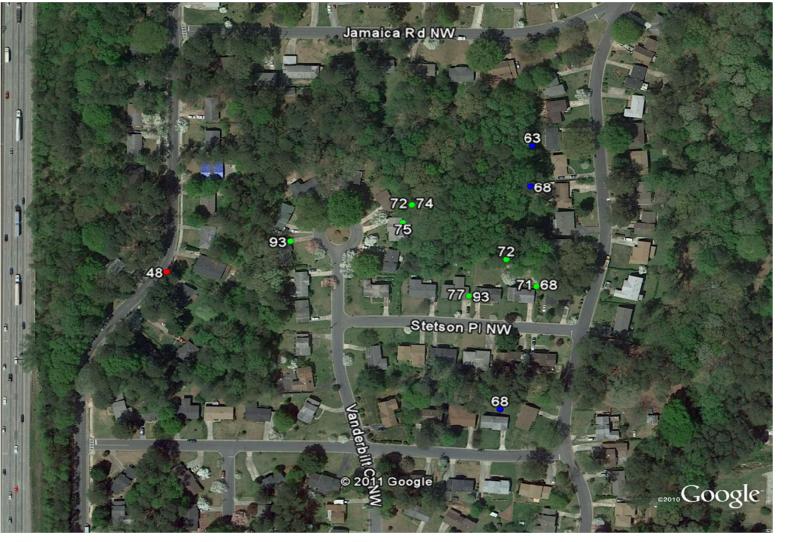
The unauthorized meter!











FlexNet ID 42765093

Meter ID 2908944

2S / CL200

Buddy Sig 93

Buddy Address 3223 Stetson PI NW Atlanta

33.777127 N -84.493504 W

Buddy Flex ID 42785613

Buddy Mtr ID 2918977

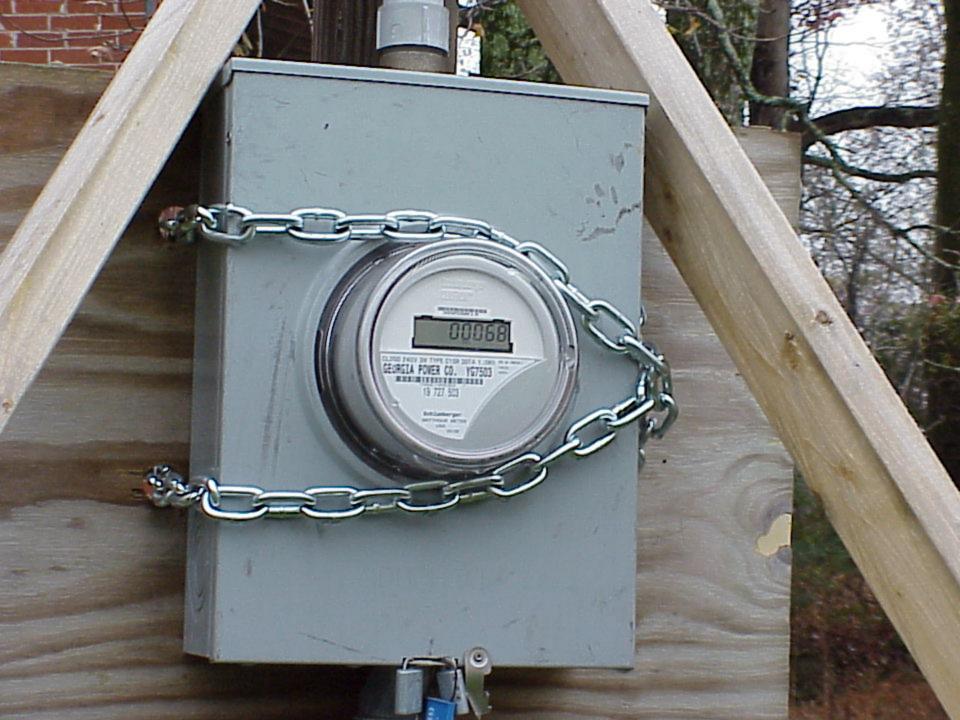




- SummaryAdapt the existing tools
- Lobby for revenue protection enhancements
- Use the tools to make better cases
- Use the new capabilities to make new types of cases
- Train the staff
- Partner with other groups
- Think out of the box
- Be successful











# WORKING WITH LAW ENFORCEMENT



A SOUTHERN COMPANY



### **Crimes & Offenses**

 16-7-25 Damaging, injuring or interfering with property of public utility companies, municipalities or political subdivisions

16-8-7 Theft by receiving stolen property







# Official Notice Revenue Protection Georgia Power Company

Name				
Address			Apt. No.	
City		, Georgia	Zip Code	
Date and Time	AM	PM		
Letter left with or at:				

This is to notify you that it is unlawful to divert electric current or to use or cause to be used any electricity without the consent of the utility company which is supplying the electricity. Georgia Code Annotated 16-7-25 together with other sections of the Georgia Code and City Ordinances, make it a punishable offense to obtain service by deception and with the intent to avoid payment. It is unlawful for any person to engage intentionally and without authority in any of the following activities:

- injure or destroy any property of a company engaged in the manufacture or sale of electricity;
- (2) prevent an electric meter from duly registering the quantity of electricity supplied;
- (3) receive, dispose of, or retain possession or control of a stolen or unauthorized electric meter, or;
- (4) divert any electric service of the company.

The violators of City Ordinance No. \_\_\_\_\_\_, Georgia Code Annotated 16-7-25 (Damaging, injuring or interfering with property of public utility companies, municipalities or political subdivision) and Georgia Code Annotated 16-8-7 (Theft by Receiving Stolen Property) are generally punished as for a misdemeanor and may be subject to a fine and/or imprisonment. Theft of service is also punishable in certain cases as a felony.

Be advised that Georgia Power Company will take all necessary steps to prosecute violators of Georgia Code Annotated 16-7-25 and 16-8-7 and will strictly enforce its rights.

If you have any questions with respect to this matter, contact Georgia Power Company in order to avoid any unnecessary misunderstanding.

Contact:	Customer Signature
Phone:	
xtension:	
	Date







# QUESTIONS



A SOUTHERN COMPANY