

Regulatory and Industry Practices to Reduce Losses

Danielle Jaussaud
Public Utility Commission of Texas
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Line losses and Electricity Theft National Statistics

- Electricity theft is a concern nationwide and represent several billion dollars annually.
- The FBI is involved in investigating electricity theft. (I will get some more information for this slide.)

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Line losses at Austin Energy

- Total line losses are estimated at 9% of total electricity generation, costing \$81 million/year to the company.
- Line losses due to electricity theft are 1% to 3% of total generation, costing \$9 million per year.

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Line losses Investigations at Austin Energy (AE)

- AE has 7 full time investigators, plus 6 office staff persons conducting consumption analysis.
- Line losses due to theft or meter malfunction are detected in several ways:
 - Office staff conducts billing data analysis. Changes in consumption may prompt further analysis and investigation. Such analysis detects meter malfunction as well as theft.

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Analyzing Consumption History

- If the meter reading goes to zero, it is usually a meter going bad.
- If consumption analysis shows a reduction in consumption, it probably is a customer tampering with the meter to slow it down.
- If it's a new customer and there is no consumption history, it is harder to catch.
- Comparison of gas bills and electricity bills when the company suspects theft at a location with little consumption history.
- Comparison of kVA usage v. kW usage on commercial accounts may indicate tampering.

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Detecting Meter Tampering

- Meter readers conduct routing checks in the field to detect tampering of meters or suspicious wiring to bypass the meter. They can detect:
 - Damage to the meter (first picture below)
 - Hole drilled into the glass to introduce a piece of wire that serves to slow down the meter
 - Use of jumper cables to divert electricity before it goes through the meter (second picture)
 - Broken seal as indication that the meter has been opened and tampered with (third picture)

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Remote Metering

- New meters that allow for remote meter reading flag possible cases of tampering. However, very few of the many flags are indications of meter tampering. Austin Energy stated that out of 1500 flags, they find that less than 20 are worth investigating.
- On the negative side, such meters eliminate the need for a meter reader, an important agent in detecting meter fraud.
- The technology is not yet ready, but research is on-going.

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Meter Tampering (cont'd)

- Approximately 80% of cases of theft are from residential customers, but commercial customers are responsible for 80% of the cost of electricity theft.
- If tampering is found at a commercial location, it is almost certain that the business owner also steals electricity at his home. All his accounts are investigated.

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Fire Department, police Involvement

- Electricity theft sometimes causes building fires and tampering is sometimes discovered by fire officials investigating the causes of a fire.
- Accidents, injuries and even deaths due to electrocution lead the police to cases of electricity theft.
- Coordination with the police often leads to drug dealers who use electricity in illegal drug laboratories.

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Illegal Drug Case

- Centerpoint Energy was led by police to a house where people were growing marijuana. The house was not inhabited, even though it appeared to be. Using an electrician, they had removed the meter and drilled a hole through the wall, then replaced the meter so there was no sign from the outside that they were stealing electricity. The normal lighting went through the meter, but they had rigged up a small distribution system inside the house that by-passed the meter to power an irrigation system and growth lights that were on 24/7. They had 15 houses rigged up in that manner, each house netted \$30,000 a month. There was one house that was full of cash.

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Fighting Against Electricity Theft

- Public appeals and advertisement
 - Austin Energy publicizes the risks involved in stealing electricity, showing burnt down houses and electrocuted limbs in television ads.
 - AE distributes educational flyers in at-risk neighborhoods and invites the public to report suspicious activity.
 - AE publicizes cases of individuals sued and jailed for electricity theft.

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Crimes related to electricity theft

- Theft of copper wire: there have been cases of electricity poles being cut down so the thief could get to the copper wire.
- Boxes of seals (see picture above) have disappeared from warehouses. Each seal has a unique number and is carefully logged so it can be tracked.

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Working with the Legal system

- The companies work closely with local, state and federal law enforcement agencies so that laws are put in place to enable them to prosecute electricity thieves.
- In one case, the thief's lawyer argued that the company could not prove the man had caused the company pecuniary loss. For a conviction, it was sufficient to prove that there had been tampering of the meter at the man's residence.

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Working with the Legal system (cont'd)

- In Houston, Centerpoint Energy complained that they were not able to bring about a conviction because they lacked evidence that the individual has actually done the rigging. A new DA is soon to be elected and the Company is planning to work with him to get a different ruling.

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Working with the Legal system (cont'd)

- In another case, a man was offering to rig other people's meters for money. He was using stolen equipment and was able to replace the meter and the seal and go undetected. When he started offering his service to others, he was reported to police and is now in court fighting felony charges against him.

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When a customer is caught stealing

- The company removes all equipment and stops service entirely.
- If the offender agrees to pay the company back for damage to the equipment and unpaid electricity used, he can be reinstated.
- Sometimes customers who lose service complain at the Commission. The Company files an affidavit explaining the reasons for the service interruption, and the Commission rules.

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Austin Energy Training Center

- Austin Energy has a training center to train the personnel investigating electricity theft.
- The Nicaraguan delegation is invited to visit Austin Energy's training center and discuss the problem directly with the investigators when it comes to Austin.

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