



# PECO Smart Meter Implementation Plan Briefing

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# Elster Solutions

- Elster (Melrose PLC)
  - Westinghouse -> ABB -> Elster
  - We invented the AC watt-hour meter in 1888
  - We deployed the first RF AMI network in 1998
  - Largest utility metering company in the world
- Elster Solutions – Raleigh, NC
  - Smart Grid technologies & AMI networks
  - Over 100 AMI networks deployed
  - Commercial & Industrial (C&I) meters
  - Residential meters



# Elster – PECO

- Primary electric meter provider since 2002
  - ALPHA electronic meters for C&I customers
- Sensus AMI Project
  - Majority share of the C&I meters
  - A3 ALPHA meter with the Sensus radio modem
- Experience – A3/Sensus C&I meter
  - Shipped > 500,000 meters
    - Georgia Power
    - Mississippi Power
    - Portland GE
    - Minnesota Power
    - Alabama Power
    - Gulf Power
    - NV Energy
    - Alliant



# Elster C&I Meter – A3 ALPHA

- Safety considerations
  - Conductor and connection design
  - Component materials (including material used for the meter base)
  - Electronic design and component selection
  - Testing and test philosophy



# Meter Testing

- ANSI and IEC qualification test limits are adequate
- A3/Sensus C&I Meter
  - ANSI and IEC design tests for metrology – Elster
  - FCC and other testing for radio modems – Sensus
  - Combined units (meter & RF modem) – Sensus
  - Combined units (meter & RF modem) - Elster
- Specific Elster tests to enhance safety
  - Insulation testing (assure voltage arc-over limit met on every meter)
  - Temperature testing on meter electronics
- Testing Philosophy
  - Test qualification samples above the limit
    - To know where the design limits are
    - To assure all products exceed the limit
  - Frequency of testing: occasionally repeat tests



# Lessons Learned Elster AMI Deployments

- Every project is different
- System end-to-end testing is essential
- Many things can contribute to a failure that are not related to the meter
  - There is an exposed socket, wiring, and/or consumer interconnection issues when meter is exchanged
  - When all meters are changed, most bad events will be associated with the meter change (lightning strikes, appliance failures, etc), although the root cause may be something other than the meter



# Thank You

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