New River Light & Power - AMI Integration

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System

• Located in Boone
• Owned by Appalachian State University
• 8,500 customers
• 6,000 are residential
  • Over 2,500 residents turn over each year
  • Large percentage are in apartment complexes
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Challenges

• Justification- 2.3 Million Investment ($270/meter)
  • Cost: 2.3 Million
  • Payback - Tangible
    • + Meter Reader reductions (3)
    • + Meter reading accuracy/ +Reduction of rereads
    • (-) IT demands
      • Analytics resources
      • Customer access to Data
  • (-) Customer Service Representatives
    • Complex billing/payment options
    • Customer access to data reports
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Challenges

• Payback - Intangible
  • Program offerings
    • Prepay
    • Customer Convenience
    • Energy savings
    • Demand savings (Beat the Peak)
    • Analytics

• System efficiencies
  • Voltage reduction
  • Damaged Meters
  • Failed customer equipment
Getting Started

We wanted more than just a meter reading system...
Improved Customer Service

We want to help our customers understand their bills and consumption...
Improved Outage Response

We want to know about outages...
Automating Service Orders

We needed a way to simplify service orders...
Automating Cut-Off for Non-Pay

And Cut-Off for Non-Pay needed streamlining...
We want to allow our customers flexibility in paying for electricity...
Joining NRLP Customer Portal with AMI Portal

We wanted customers to see all their information easily...
Academic Integration

We want to help the students at Appalachian...
Cost of Service and Rate Data

We want to make sure our rates are accurate and fair to all customers...
What’s Next?

- Continued Academic Integration
- More accurate cost of service and rate case data through available AMI data.
Operations
• Temps approaching +100F above ambient
• Bad or loose lugs/connections upon inspection
• Customers informed that repairs necessary
Voltage Report identified sag to 219-220 volts on five 240 volt services connected to same transformer

Transformer found to be at 120-156% load

2 secondary drops moved to nearby under-loaded transformer
Transformer Right-Sizing

- Boone Post Office 300kVA to 75kVA
- Transformer average load now at ~50%
- 225kVA winding loss eliminated = $
Virtual Meters

• Jan 2018 - Used SCADA raw data & custom MSAccess database analysis
• Summer/Fall 2018 – Installed AMI meters at all 5 substations
• Jan 2019 – Used EcoOne virtual meter data
• Compare year over year and provide projected earning/cost based on MTD

24,516 kWh Total
22,319 kWh Total
Links

NRLP Website

Customer Portal Introduction Video

ASU C.A.R.E. Center

E2e Project Article

ASU Energy Center
Summary

• There are Positives and Negatives to implementing and AMI system
  • Classic “Dealing with change”
  • Identifying customer wants, needs, and greeds today and the future..

• Meter reading alone is NOT justification for AMI

• Staffing needs change significantly with the new technology
  • Fill new needs while finding the right place for existing staff…..

• Gains in customer information and outage notifications are helpful

• Data availability increases

• System Management – XFMRs, meters, voltage, etc.
Questions?

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Thank You

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