

Power Supplier Experiences In Resource Management

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May 12, 2012

Agenda

- **Who we are**
- **Our experience in resource management**
 - **Share our experiences deploying new technology and new solutions to optimize operations and resources**
- **Consideration for selection and deployment of new technologies**
- **What we have deployed and why**
- **Questions and discussion**

Dairyland Power Cooperative



- **G & T Cooperative**
- **25 Member Co-ops**
- **44,500 square miles**
- **1,452 MW Generation**
- **3,150 Mi. Transmission**
- **280 Substations**
- **16 Municipalities**
- **620 FTEs**

Vision and Goals

- **Based around delivery of resources and solutions that best address our business requirements and customer expectations**
- **General enough ?**
 - . . . but as defined by whom**
 - **the customer (Member cooperatives / owners)**
 - **the enterprise (internal support requirements)**
 - **regulatory agencies**

What are the needs and requirements?

- **Fortunately we all know what the customer wants**
 - **Customers want it all**
 - **Customers want it free (or at least cheap)**
 - **And customers want it now!**
- **Unfortunately, requirements continue to evolve as quickly as technology and new solutions evolve . . .**



How can we be successful?

- **Adopt a strategy that is flexible and adaptive**
 - **Smaller deployments that allow us to build on successes**
 - **Acknowledge that some technologies and solutions may not meet long term needs**
 - e.g. need to adjust technologies as business drivers and regulatory requirements evolve
 - **Select standards and infrastructure carefully**
 - **Start with infrastructure**

How about an example?

Dairyland Experience

- **Historically, technology that best achieved consumer, regulatory, and operational expectations were based on conservation and demand side management**
- **Dairyland, and our customers benefited significantly from a direct control load management system installed in 1980**
- **Load management evolved into a unique “Operations” tool**

Historically . . .

- **Direct load control provided**
 - Peak shaving
 - Avoidance of starting high cost generation units for short periods of time
 - Avoided adding peaking generation capacity
- **Evolved into a very dynamic operations tool utilized to**
 - Support regulation
 - Support Control Performance Standards
 - Support Contingency Reserve obligations
- **Unfortunately, the business changed**

New Business Drivers

- New regulatory requirements
- Environmental impacts
- Energy Markets
- Smart(er) Grid ?
- Cell phones and social networking bring new expectations for data and information



Energy Markets

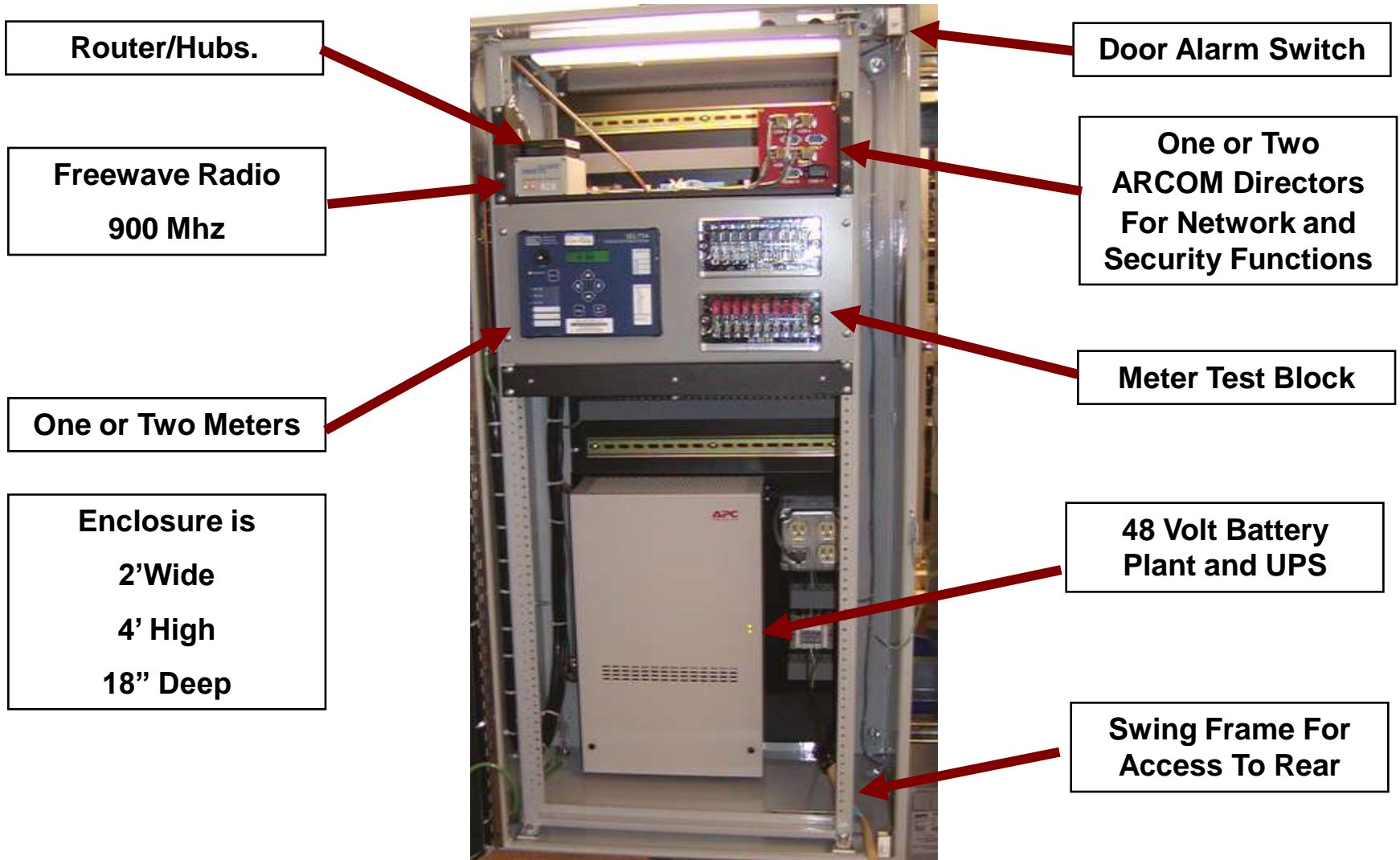
Already trying to provide new technology

- **Three failed attempts at AMI solution to help members leverage load management and be more responsive to customers**
- **Expectations (and costs) too diverse**
- **An infrastructure strategy evolved**
 - **Flexibility and options to allow member cooperatives to develop their own AMI, SCADA, and other future technologies**

A Distribution Automation Solution

- **Telecommunications backbone to provide connectivity and data through a managed computerized network**
 - **Allows back-haul of AMI and SCADA data for cooperatives**
 - **Delivers real-time data and metering for Dairyland**
 - **Provides infrastructure for deployment of future “Smart Grid” technologies**

The Distribution Automation Solution *(cont.)*



What are we preparing looking for next

- **Several members are adding**
 - **distribution SCADA functionality**
 - **Automated Voltage Control for feeders**
- **DPC attempting to replace our ability to provide the regulation (load following) function that we lost to the Midwest ISO Ancillary Services Market**
 - **Integrated Water Heating Pilot Project**
 - **Wholesale Rate Study to facilitate bidding Load Management resources (another pilot project)**

Closing Comments

- **Balance cost drivers with customer and regulator expectations . . . Unfortunately it is very easy to fall in love with a technology**
- **Keep expectations in sync**
 - **Smart grid technologies offer huge potential but too many dependencies (e.g. data collection and communications deployments must integrate with back office applications and customer expectations)**
- **Smart Grid - Dot.Com comparisons**



Questions
and
Discussion



May 12, 2012

gridposium  2011
austin texas May 12-13

Thank You!


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