Presentation of Abstract Submission

To the Workshop For Research In Electricity Infrastructure Hardening

June 9, 2006

Gainesville, FL

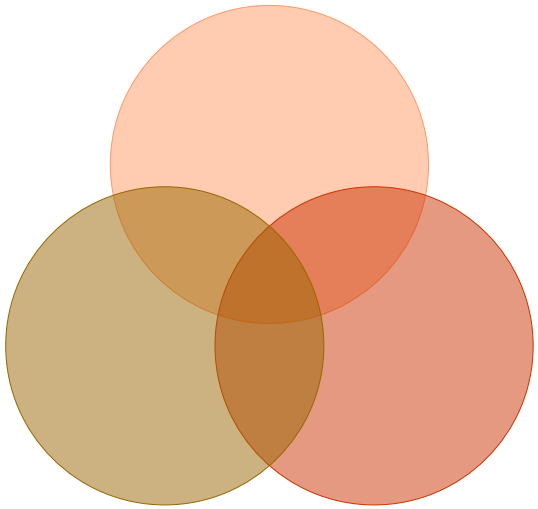
davies consulting inc.

Agenda

- DCI Background
- Experience and Research Proposal
  - Portfolio Analysis
  - Storm Benchmarking
  - Vegetation Management
  - Restoration Strategy Impact Analysis
  - Holistic Understanding of Cost vs Benefit

Davies Consulting Incorporated (DCI)

Strategy Development & Implementation



Organizational Effectiveness

Decision Support Tools & Analytic Modeling

- DCI combines management consulting expertise with industry experience and decision support tools and analytic capabilities, to help our clients meet their goals

DCI Research Capabilities

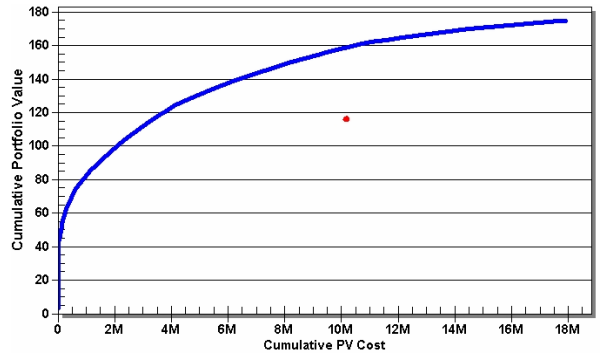
- Extensive utility consulting experience
  - Storm Restoration Best Practices
  - Reliability Performance Optimization
  - Operational Excellence
  - Process and Change Management Implementation
- Extensive database of utility best practices (Storm Benchmarking)
- Analytic methodologies
  - Portfolio Optimization
  - Simulation Modeling and Analysis
- Direct testimony in public utility service commission hearings

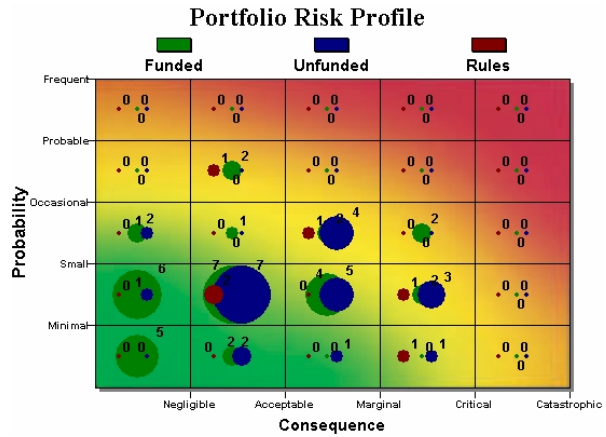
DCI Background with Storm Hardening

- Working With Utilities To:
  - Develop Storm Hardening Objectives
  - Create Strategic Plans for Hardening
  - Establish Common Definition of Storm Hardening
  - Identify and Prioritize Critical Assets to be Hardened
  - Understand Economic Implications and Risks Associated with Investment Decisions

Portfolio Analysis for Hardening Decision Support

- Experience
  - Capital and O&M portfolio prioritization
  - Reliability performance optimization model
  - Risk assessment and management methodologies
- DCI Collaboration with PURC
  - Work With PURC Participants To
    - Identify Critical Attributes of "Value" to Utility Companies
    - Create Multi-Attribute Utility Value Functions
    - Assess Cost Impact of These Attributes
    - Evaluate Risk of Courses of Action
  - Establish A Best Practice List of Attributes

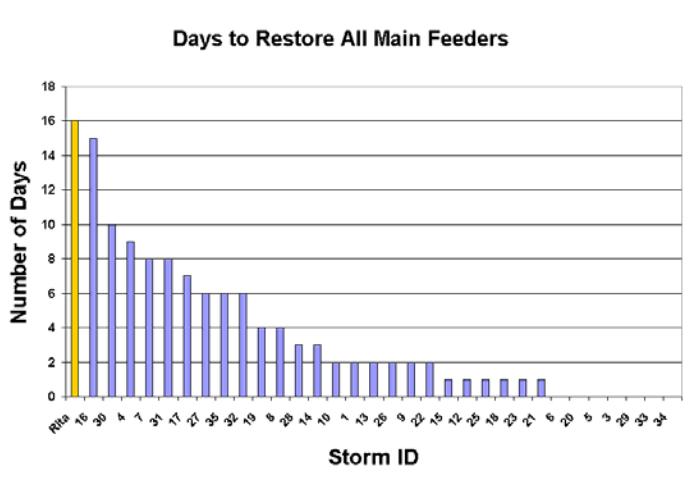




Storm Benchmarking

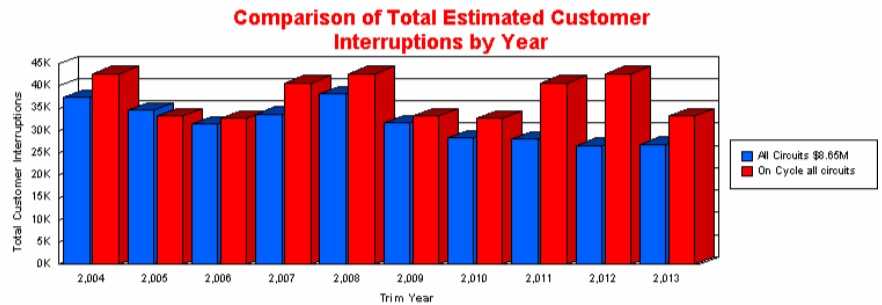
- Experience
  - Database of restoration information including 33 major events for 19 major North American utilities
  - Understanding of data and benchmarking methodologies in the utility industry
- DCI Collaboration with PURC
  - Understand how database can be leveraged to support the hardening analysis
  - Expand database to include PURC participants
  - Enhance database by using probabilistic methodologies to allow for sensitivity analysis related to damage and restoration effort levels

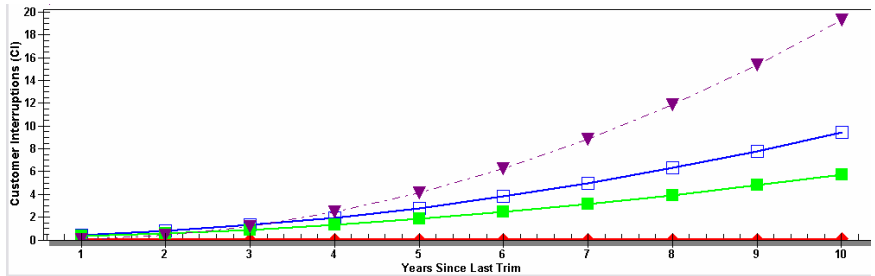
Example of Benchmark Analysis



Vegetation Management

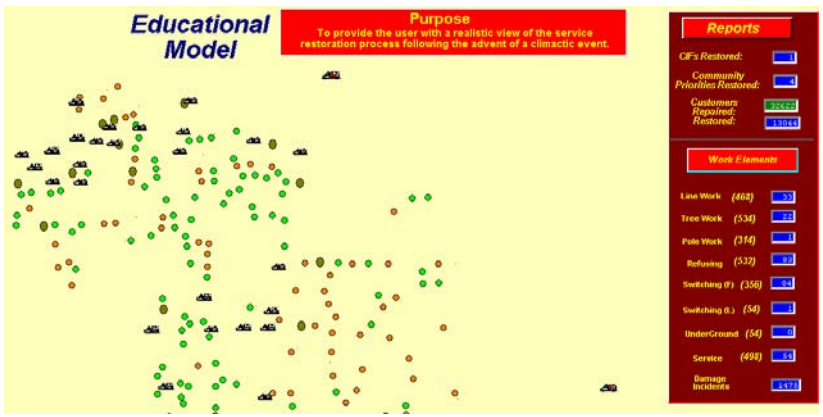
- Experience
  - Model that correlates VM spending and resulting reliability performance
  - Estimating VM program impact on future storm damage
  - In depth assessments of VM programs
- DCI Collaboration with PURC
  - Refine Effective Vegetation Management Strategies that will Complement Storm Hardening Efforts
  - Incorporate Probabilities of Severe Storms and the Damage Probability as a Result of Vegetation Management Decisions
  - Evaluate the Costs Associated with different VM alternatives
  - Assess Risk Associated With Decisions In Terms Of
    - Normal Day-to-day Vegetation Management
    - Severe Storm Vegetation Management
    - Catastrophic Storm Events

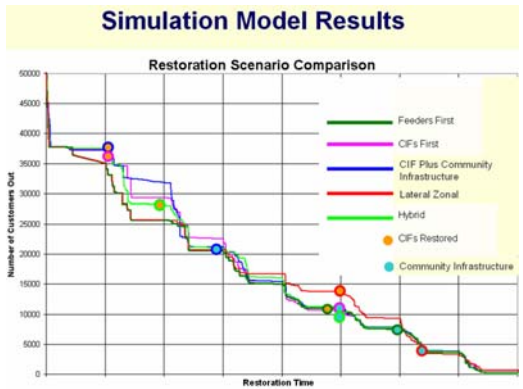




Hardening Strategy Impact Analysis

- Experience
  - Working with utility to develop Restoration Strategy Simulation Model
  - Inputs are: Damage Estimates, Network Characteristics, and Resource Requirement Estimates
  - Outputs
    - Restoration Timeline Down to circuit section level
    - Resource Utilization
    - Cost Implications of various Resource and Restoration Strategies
- DCI Collaboration with PURC
  - Research heuristic methodologies for resource allocation optimization





Holistic Analysis

- Typical Storm Hardening Program Components
  - Increase Pole Class
  - Shorten Span Length
  - Increase Guying
  - Larger Cross Arms
  - Enhance Vegetation Management
  - Underground lines
  - Relocate Rear Lot Construction to Front Lot
- DCI Collaboration with PURC
  - Use Expertise and Models to Support PURC Participant Storm Hardening Efforts to Identify Cost Effective Storm Hardening Techniques to:
    - Reduce the Number of Outages
    - Reduce Restoration Times
  - Assist the Evaluation of Storm Hardening Best Practices and Best Strategies

Discussion

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