Utilizing the Enhanced Functionality of ArcGIS for Electric Transmission Asset Management

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  - EGUG 2004 - Williamsburg, Virginia
Corporate Philosophy at PNM:

- Implement Automation to Help Maximize Return on Assets
- Utilize existing applications where they make sense
- Develop custom applications when necessary
- Leverage GIS technology whenever possible

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Public Service Company of New Mexico:

- New Mexico’s largest Investor Owned Utility
- Provides both Electric and Gas Service
- 405,000+ electric customers
- 459,000+ natural gas customers
- Approximately 2,800 miles of Electric Transmission
- Approximately 1,500 miles of Gas Transmission
- Approximately 7,200 miles of Electric Distribution
- Approximately 10,900 miles of Gas Distribution
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Electric Service Territory

Gas Service Territory
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PNM’s Operations

- PNM’s electric rates decreased in 2003, and will decrease again in the next 5 years. Rates will be pre-1980 levels.
- Factoring in inflation, PNM’s rates have decreased 41% since 1985.
- Average annual electric bills in NM are the SECOND lowest in the nation today.
- In 2001, PNM was rated #1 in EEI’s reliability survey - 64 SAIDI minutes (System Average Interruption Duration Index)
- In 2002, PNM SAIDI minutes dropped to 55, in 2003 PNM SAIDI minutes dropped to 51.
- Learning how to manage our assets have led to these results.
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- Examples of Utilizing Automation at Public Service Company of New Mexico
  - **eTAMIS** – a GIS System combined with Automated Inspection and Maintenance capabilities for Electric Transmission facilities
  - **gTAMIS** - a GIS System combined with Automated Inspection and Maintenance capabilities for Gas Transmission facilities
  - **ALPS** – Automated Line Patrol System developed for Electric Distribution facilities
  - **BC_LAMPS** – Street Light inventory, billing, inspection and maintenance program
  - **AMIGO** – Gas operations and Regulatory Compliance program
Strategic Asset Management System

DATA/GIS
Work Management, Billing/Financial

ELEC. DISTRIBUTION
GAS DISTRIBUTION
TAMIS
ELEC. TRANSMISSION
GAS TRANSMISSION

STREET LIGHTS
GAS STATIONS
SOFA
CASCADE
BC-LAMPS

FUTURE (Thin Clients)

Asset Management
Design & Construction
Inspection & Maintenance
Business Segments

Core
Environmental Drawing (draft stage)
Accounting
Passport

(1) Proposed
(2) In Progress
* Off the shelf software to integrate.
eTAMIS Timeline

- Pre 1997 – two incidents that showed extreme inefficiencies
- 1997 – began programming in ArcView (Avenue)
- 1999 – migration of application to ArcView 3.2
- 2002 – migration of application to ArcMap 8.x
- 2003 – enhancing application to where we are today
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Software required:

• Arc View 3.x
• Tracking Analyst
• Network Analyst
• Microsoft Access
• Microsoft Word
• Adobe Acrobat Reader
Enhancements in ArcMap 8.x beneficial to eTAMIS

- Geodatabase functionality
- Speed of application startup and activity
- Visual Basic programming
- On the fly reprojection
- Ability to display multiple data sources in differing projections
- Application requires fewer extensions to achieve functionality
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Software required:

- Arc View 8.x
- ESRI GPS Support
- Microsoft SqlServer and MSDE (Field Units)
- Internet Explorer based viewing for all documentation (applicable plug ins)
- Adobe Acrobat Reader (also initiated through browser)
Benefits of 8.x version of eTAMIS:

- Added security provided by SqlServer
- Stability of application appears better
- Easier to maneuver around (fewer clicks)
- Enhanced methods for field people to bring back changes, additions, deletions
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- DEMO
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Where Do We Go From Here:

- Vegetation Management
- Functionality of Safe Scripts
- Migration to ArcGIS 9.x
- Streamlining of Application
- Positioning ourselves to take advantage of newer technology
In Summary:

- Importance of Trend Analysis
- Functionality of database interactions
- Potential Federal regulations pertaining to Electric Transmission Operations
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Questions?

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