

Comprehensive Reliability Plan for Montgomery County, Maryland

Agenda

The Plan Contains Seven Key Thrusts

- Enhanced Vegetation Management
- Substation Supply Hardening
- Priority Feeder Program
- Planning for Growth
- Distribution Automation
- Selective Undergrounding
- Underground Residential Cable Replacement
- Next Steps

Vegetation Management

- Trees are the single largest cause of outages
- Pepco selects circuits annually to trim based on the greatest number of outages from trees
- Last Friday, MD PSC approved Pepco's plan to enhance the vegetation management program with \$3M annual increase in program
- Trimming alone will not prevent outages – Large trees above the lines will always cause risk of outages
- Largest issue remains customers acceptance/permission to do trimming necessary for improved reliability

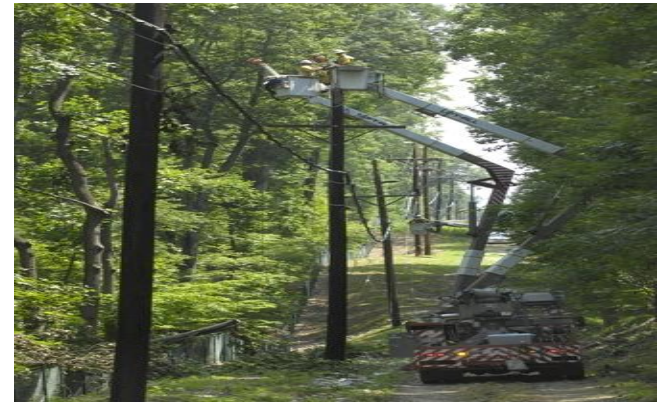


Enhanced Vegetation Management Plans

- 2010 tree trimming budget increased in Maryland from \$4.3M to \$6.3M
- Enhanced program started in June with hiring of 20 additional tree crews and \$2M of additional funding
- Focused on the following areas: White Oak, Middlebrook, Wood Acres, Parklawn, Potomac and Beverly Farms
- MD DNR regulations allows for sufficient clearance for 2 years growth normally expected after trimming

Substation Hardening

- Performing detailed investigation of cause for outages to each of the 69,000 volt substation supply circuits
- First step, enhanced vegetation management program to remove all overhanging limbs and danger trees off right-of-way – private property trees
- Trimming on Kensington and Silver Spring area supply circuit underway (\$500k for one feeder)
- Tree trimming alone will not increase reliability of lines where trees have grown to a height above the wires and cannot remove adequate number of trees
- Rerouting or undergrounding will be required in many cases where adequate trees cannot be removed
- Multi-year capital program to reroute or underground



Substation Supply Hardening

Over next 2 years targeting substations serving:

Potomac, Silver Spring, Kensington and Chevy Chase

Over next 5 years targeting substations serving:

Takoma Park

Colesville

Potomac

Fairland

Chevy Chase

Rockville

Silver Spring

White Oak

Quince Orchard

Priority Feeder Program

- Annual evaluation of the 13 least performing feeders
- Detailed field investigation to determine the cause of outages and corrective actions
- Enhanced focus on repeat circuits with more advanced corrective actions including automation, rerouting or different type of construction
- In 2009, established program to investigate customers that have had large number of outages with 66% reduction in number of customers experiencing more than 8 outages
- Program has resulted in a 34% - 46% reliability improvement in the frequency of interruptions and 55% - 69% reduction in the duration of outages
- Spend \$4.5 M/year in Pepco Maryland region on least performing feeders; increasing 2011 budget by \$2M/yr.



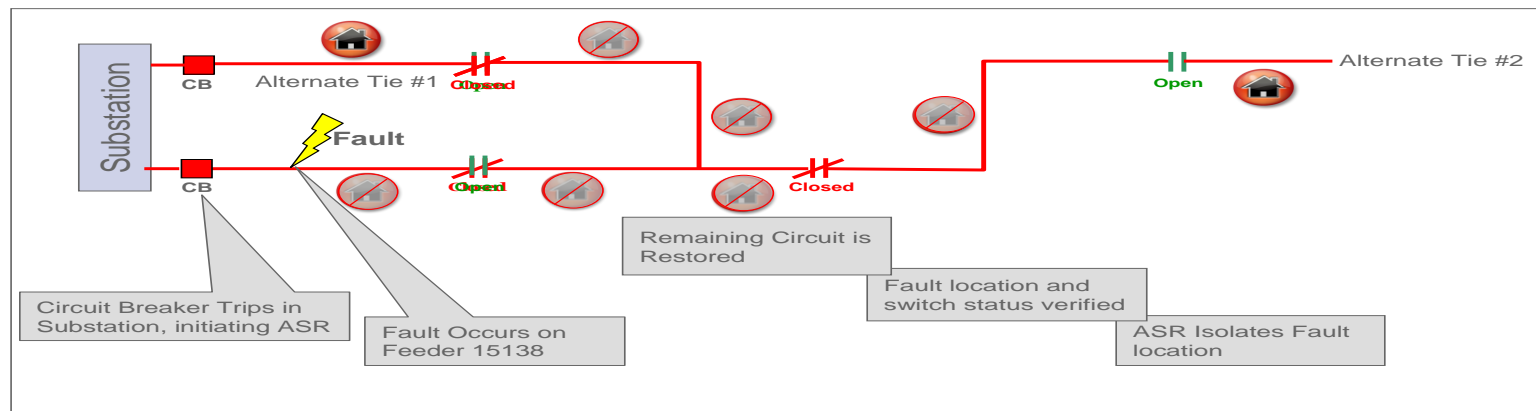
Planning for Growth

- Develop 10 year plans to project needed new facilities to support growth
- Growth plan reviewed every 2 years to reflect changes in growth and new service requests
- Investing \$34M across Pepco region over next 5 years for substation upgrades and new feeders
- New feeders and substations will serve growing load in Silver Spring, Gaithersburg and North Potomac

Distribution Automation

- Advanced automation of the distribution system to prevent outages and restore customers faster after an outage occurs
- DOE funding of 50% of the cost allows for acceleration of the project
- Installation targeted at locations that experienced the highest number of outages

Automatic Sectionalization and Restoration System (ASR) Sequences



With ASR...

1080 total customers affected
780 customers restored within 51 seconds
300 remaining customers restored in less than 1 hour

Without ASR...

1080 total customers affected
1080 customers out for 2 hours

Distribution Automation

- Automatic sectionalization & restoration projects planned in Montgomery County over the next three years as part of the DOE SGIG in:

Somerset

Kensington

Aspen Hill

Glen Echo

Drummond

Cabin John

Bethesda

Potomac

Carderock

Forest Glen

Garrett Park

Sandy Spring

Layhill

Norbeck

Glenmont

Twinbrook

Norwood

Olney

- Between 2011 and 2013 we plan to spend \$15M on automation in the above areas

Selective Undergrounding

- Concept has been discussed in the past many times at state, municipal & local levels
- Cost of undergrounding entire overhead system cannot be justified based on reliability gains alone
- District of Columbia PSC issued a report on undergrounding in July that confirmed that the cost cannot be justified by the benefits alone
- Targeted or selective undergrounding options:
 - Mainline or backbone of primary feeder
 - Backbone and the lateral taps of primary feeder
 - Backbone, lateral taps of primary feeder, transformers & secondary wires (including service drops)
- Still a last resort due to cost - \$3.5 to \$11 million/mile

Underground Residential Cable Replacement /Refurbishment

- Planned replacement of underground cable that shows signs of increasing failures and causes extended customer outages
- Primarily focused on replacement of cable that was installed in the 70's
- Prior to a planned replacement program, that started in 2006, 30,000 ft/year of cable was replaced annually
- Since 2007 over 410,000 ft/year of cable has been replaced annually
- In Montgomery County 551,145 ft of cable has been replaced since 2008 (104 miles of cable) at a cost of nearly \$9 million

Underground Residential Cable Replacement /Refurbishment

- Over 120,000 ft. of URD cable replaced / refurbished in Montgomery County in 2010 YTD
- During 2010 URD cable will be replaced in the following subdivisions:

Maryland Place

The Village

Allanwood

Inverness

Fairview Estates

Westleigh

Paint Branch Est.

Dale Drive

Owens Court

Countryside

Rock Creek Manor

Sumner Village

Greenleaf Ave.

Summary – Pepco Maryland

	Annual Expenditures		5 Yr. Total
	<u>Current</u>	<u>Planned</u>	
Vegetation Management	\$4.3 M	\$7.3M	\$36.5M
Priority Feeders	\$4.5M	\$6.5M	\$32.5M
Load Growth	\$12M	\$12M	\$60M
Distribution Automation	\$1.2M	\$3M	\$15M
URD Cable Replacement	\$6.3M	\$7.5M	\$37.5M
Substation Hardening/ Selective Undergrounding	<u>\$0M</u>	<u>\$15M</u>	<u>\$75M</u>
Total	\$28.3M	\$51.3M	\$256.5M

Next Steps

- Need to get more detailed input from key stakeholders in Montgomery County
- Perform more detailed engineering analysis on select substations and feeders
- Enlist support of Montgomery County officials in gaining support from communities and other government agencies for enacting plans going forward
- Determine schedule for follow-up meetings
 - November – 3 months – present detailed plan incorporating input from Montgomery County
 - February – 6 months – status meeting
 - August – 12 months – post 2011 summer review