



Inter-regional Planning Update

Transmission Expansion Advisory
Committee

July 14, 2016

- Scenario Analysis
 - Previous plan for hydro / wind scenario canceled
 - Alternative approach - collect and present work already completed on this and other new resource scenarios - avoid duplicate work
- EIPC EC approved 2-year production cost software agreement
 - Agreement on major points for EIPC license of PROMOD IV
 - PJM and MISO to coordinated review/update/verification tests scheduled to begin
- New Eastern Interconnection Planning Coordinator CEII NDA
 - Order 1000 and NERC MOD 32 work
 - Enables interregional power flows to be released under regional CEII protection

- All regions data exchanges and issues reviews to be completed
 - Exchanges with NYISO and MISO are frequent & ongoing
 - With new CEII NDA exchanges with SERTP to be scheduled
- SERTP / NCTPC
 - SERTP April 26, 2016 face-to-face in Atlanta – *see posted meeting materials*
 - SERTP regional process (*corrected address*): www.southeasternrtp.com
 - SERTP and PJM presentations posted
- NE Protocol
 - NY-NE IPSAC conducted May 9, 2016 – regional issues/plans/interconnection coordination - <http://www.pjm.com/committees-and-groups/stakeholder-meetings/stakeholder-groups/ipsac-ny-ne.aspx>
- SERC
 - Efforts continue coordinating LTFTS, ties and dispatch for case builds
 - 2016 loop flow study effort under development - MISO and PJM input provided

- IPSAC July 29, 2016 - <http://www.pjm.com/committees-and-groups/stakeholder-meetings/stakeholder-groups/ipsac-midwest.aspx>
- Targeted Market Efficiency Project analysis
 - TMEP analysis in progress
 - Historical congestion hedge quantification
 - JOA language presented to PC and posted
 - Stakeholder comments to be addressed
 - TMEP cost cap
 - Project benefits quantification details – *options under review*
 - *targeted completion 3rd quarter*

- Awaiting further Commission action
 - Restore the existing Cross-Border Baseline Reliability Project category and cost allocation
 - Benefits of an interregional transmission project to include both approved and planned upgrades
 - Clarify that “reliability projects” in MISO include MVPs and BRPs
 - Clarify that Interregional Public Policy Projects include MVPs in MISO and both economic and reliability projects in PJM
 - Clarify MISO’s use of discount rates in benefits calculation for Interregional Reliability and Public Policy Projects
 - MISO to clarify that Interregional Market Efficiency Projects include MVP’s and MEPs

- JOA changes
 - Detail Coordinated System Plan study steps and timeline
 - Remove interregional B/C
 - Use regional benefits as interregional cost split
 - Include generator interconnection coordination
- MISO Tariff changes
 - Remove \$5M and lower 345 kV MEP thresholds
 - Status report

FERC Directed Stakeholder Involvement

Deliverable		Due Dates (2016)				Stakeholder Forum
		20-Jun	19-Aug	18-Oct	15-Dec	
Directive P186	Include Generator Retirement Coordination Procedures in JOA	X	X	X	X	IPSAC, IPTF
Informational 186	Status Reports on Gen Retirement Coordination Language					
Informational 92	Joint Model in Regional Processes			X		IPSAC, PSC

No FERC Directed Stakeholder Involvement

	Deliverable	Due Dates (2016)		Stakeholder Forum (Informational Updates)
		20-Jun	19-Aug	
Directive P57:	Formalize Steps and Deadlines in CSP Study	X		IPSAC, PAC
Directive P131	Lower Interregional MEP Thresholds	X		RECB
Directive P132	Remove Interregional B/C Ratio	X		RECB
Directive P133	Revise Benefit Calculation of Interregional MEPs	X		RECB
Directive P185	Include BPM GI Coordination Procedures in JOA	X		IPTF
Informational P58	Aligning Interregional, MTEP, and RTEP		X	IPSAC

Additional Information



- 2016 Window # 2 Update
 - Previous result of a contingency OL on Dominion/CPLE Battleboro-Rocky Mountain 115 kV tie has been removed due to planned upgrade
- Updated slides on Dominion Local TO Criteria – End of Life Criteria are shown in the following slides
- This update will be provided to SERTP



Dominion Local TO Criteria - End Of Life Criteria Update

Dominion End of Life Criteria decision point metrics:

- 1) Facility is nearing, or has already passed, its end of life, and*
- 2) Continued operation risks negatively impacting reliability of the transmission system.*

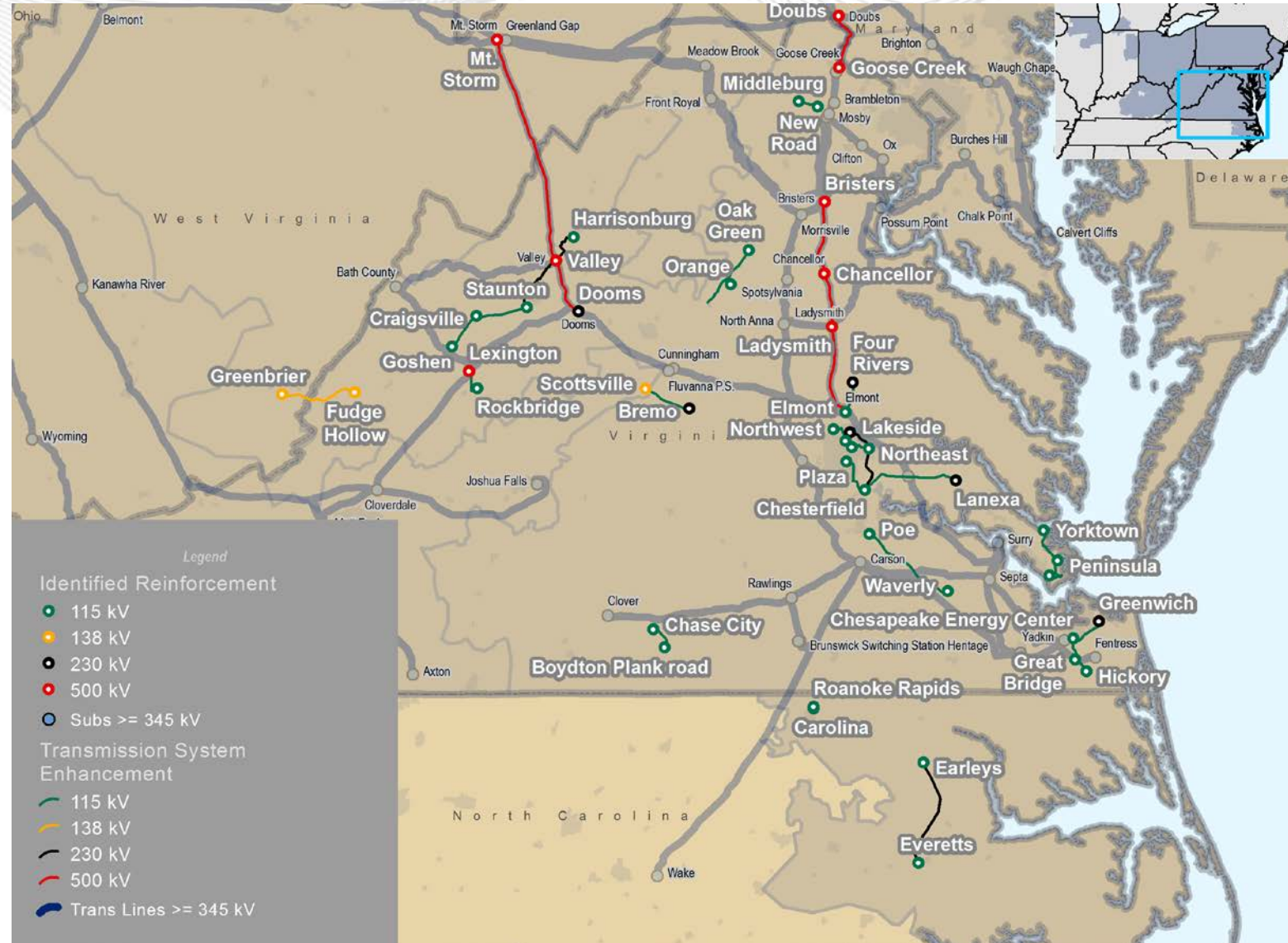
- Dominion Local TO Criteria
 - End of Life Criteria
 1. End of Life Assessment
 - Industry guidelines indicate equipment life standards
 - Wood structures - 35-55 years,
 - Conductor and connectors - 40-60 years
 - Porcelain insulators - 50 years.
 2. Reliability and System Impact
 - PJM and DOM are prioritizing and analyzing the impacts of the facilities on the next slides



Dominion End Of Life Facilities

Facilities reaching their End of Life within the immediate to 5 year horizon

Line	Voltage (kV)	In-Service Year
LEXINGTON-ROCKBRIDGE	115	1973
PORTSMOUTH-GREENWICH	115	1955
PORTSMOUTH-GREAT BRIDGE	115	1953
NEW ROAD-MIDDLEBURG	115	1953
LANEXA-WALLER	230	1952
EARLEYS-EVERETTS	115	1951
STR 551-STR 706	115	1959
CHESTERFIELD -LANEXA	115	1947
NORTHWEST-CHESTERFIELD	115	1951
STAUNTON-HARRISONBURG	115	1958
GOSHEN-CRAIGSVILLE	115	1925
PORTSMOUTH-CHURCHLAND	115	1957
CHESTERFIELD - PLAZA	115	1956
STAUNTON-CRAIGSVILLE	115	1925

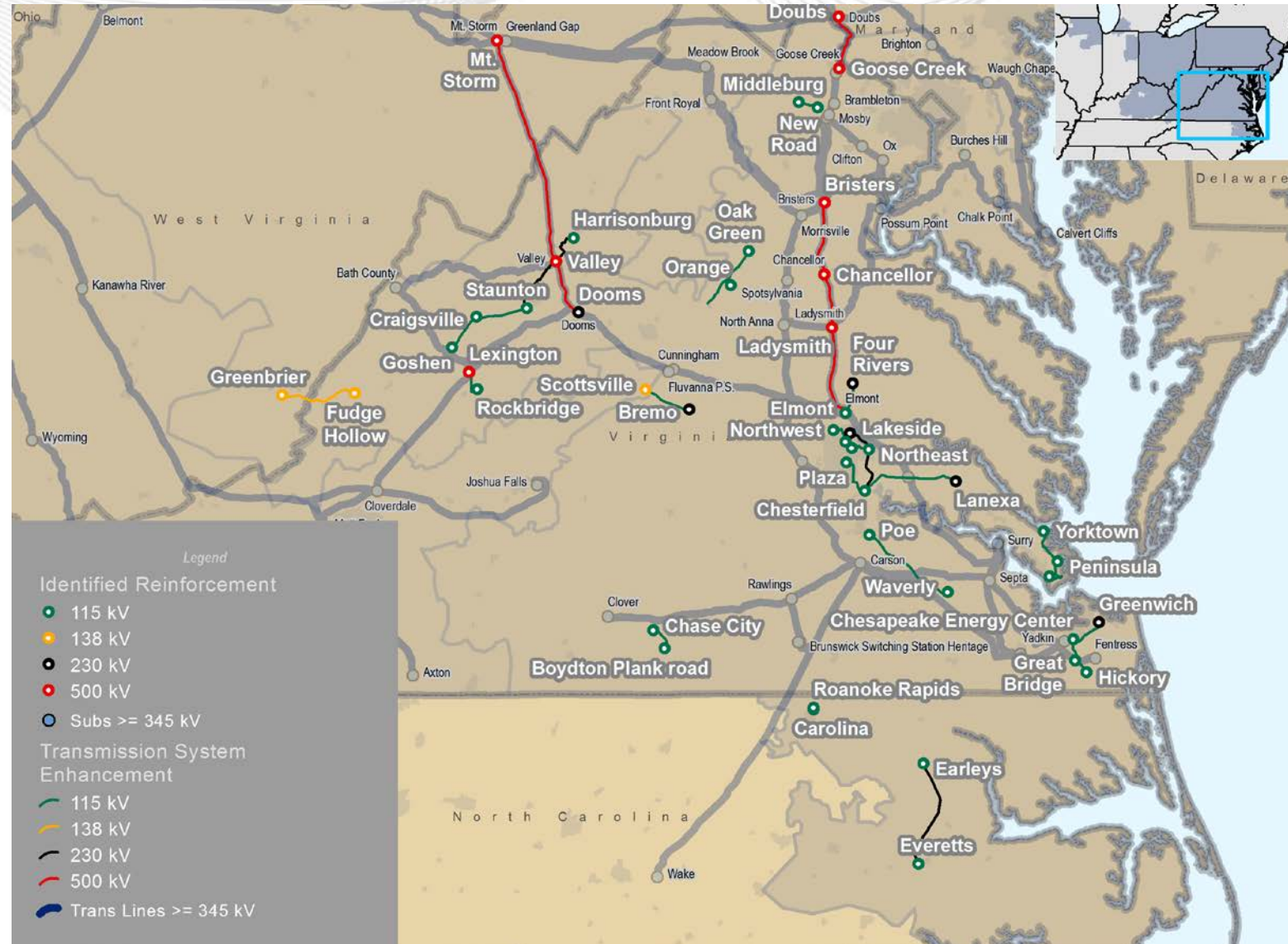




Dominion End Of Life Facilities

Facilities reaching their End of Life within the immediate to 5 year horizon

Line	Voltage (kV)	In-Service Year
NORTHEAST-CARVER	115	1958
GREAT BRIDGE-HICKORY	115	1967
YORKTOWN-PENINSULA	115	1957
FUDGE HOLLOW-GREENBRIER INTER	138	1925
CAROLINA-ROANOKE RAPIDS HYDRO	115	1931
ELMONT-FOUR RIVERS	115	1956
WHEALTON-PENINSULA	115	1966
NORTHWEST-ACCA	115	1955
ACCA-LAKESIDE	115	1968
BREMO-SCOTTSVILLE INTER	115	1975
CHASE CITY-BOYDTON PLANK	115	1955
POE-WAVERLY	115	1951
MT STORM – VALLEY	500	1964
VALLEY – DOOMS	500	1964
ELMONT – LADYSMITH	500	1966
LADYSMITH - BRISTERS	500	1966

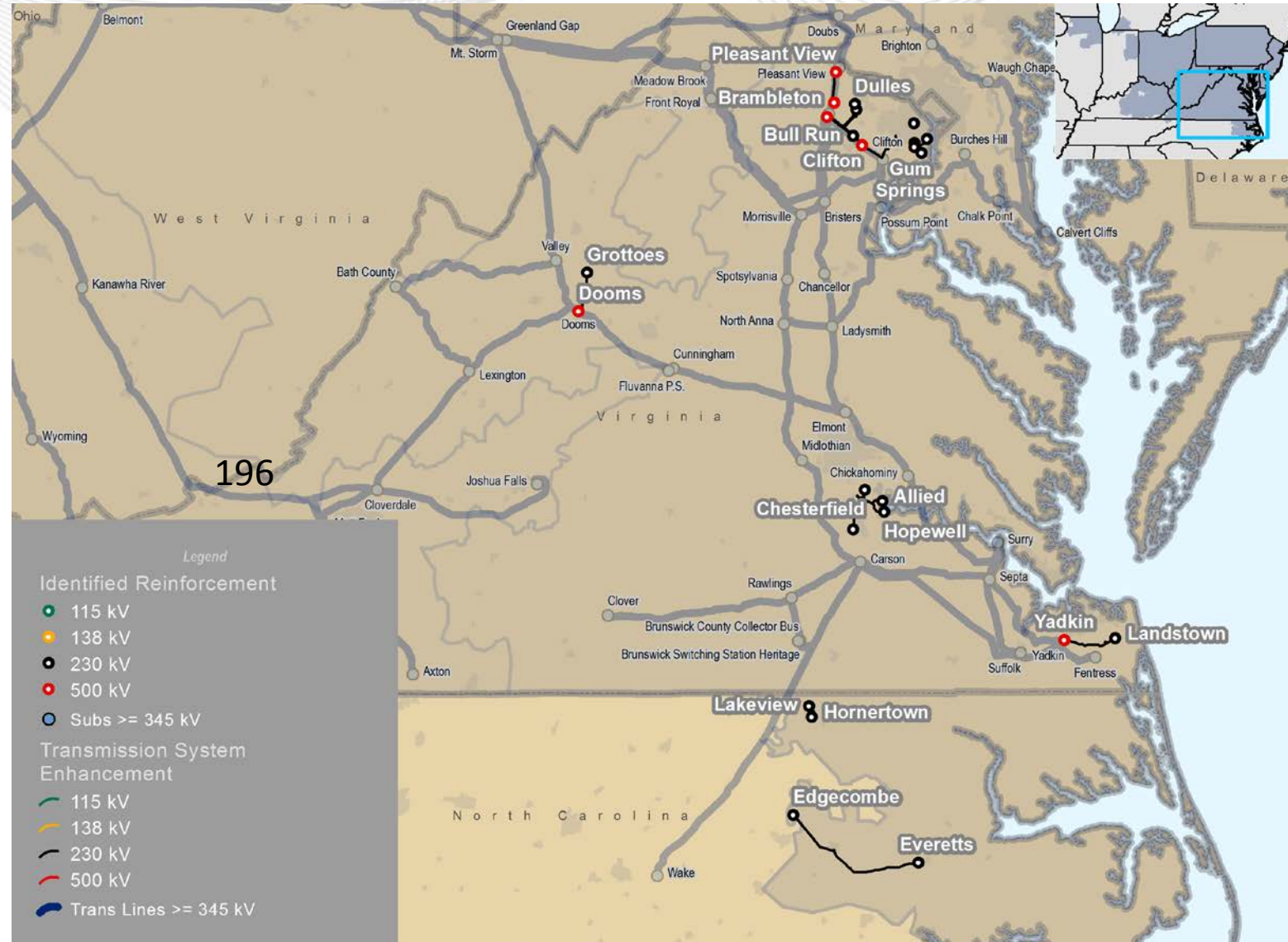




Dominion End Of Life Facilities

Facilities needing to be replaced within the immediate to 5 year horizon

Line	Voltage (kV)	In-Service Year
CHESTERFIELD - HOPEWELL	230	1969
YADKIN - LANDSTOWN	230	1965
BRAMBLETON - PLEASANT VIEW	230	1966
CLIFTON - SULLY	230	1966
LOUDOUN - BULL RUN	230	1966
HAYFIELD - VAN DORN	230	1967
LAKEVIEW - HORNERTOWN	196 230	1967
DOOMS - GROTTOS	230	1967
GUM SPRINGS - JEFFERSON ST	230	1966
CHESTERFIELD - LOCKS	230	1962
CHESTERFIELD - ALLIED	230	1964
EVERETTS - EDGECOMBE NUG	230	1967
CLIFTON - GLEN	230	1966
LOUDOUN - DULLES	230	1967
HORNERTOWN - HATHAWAY	230	1967

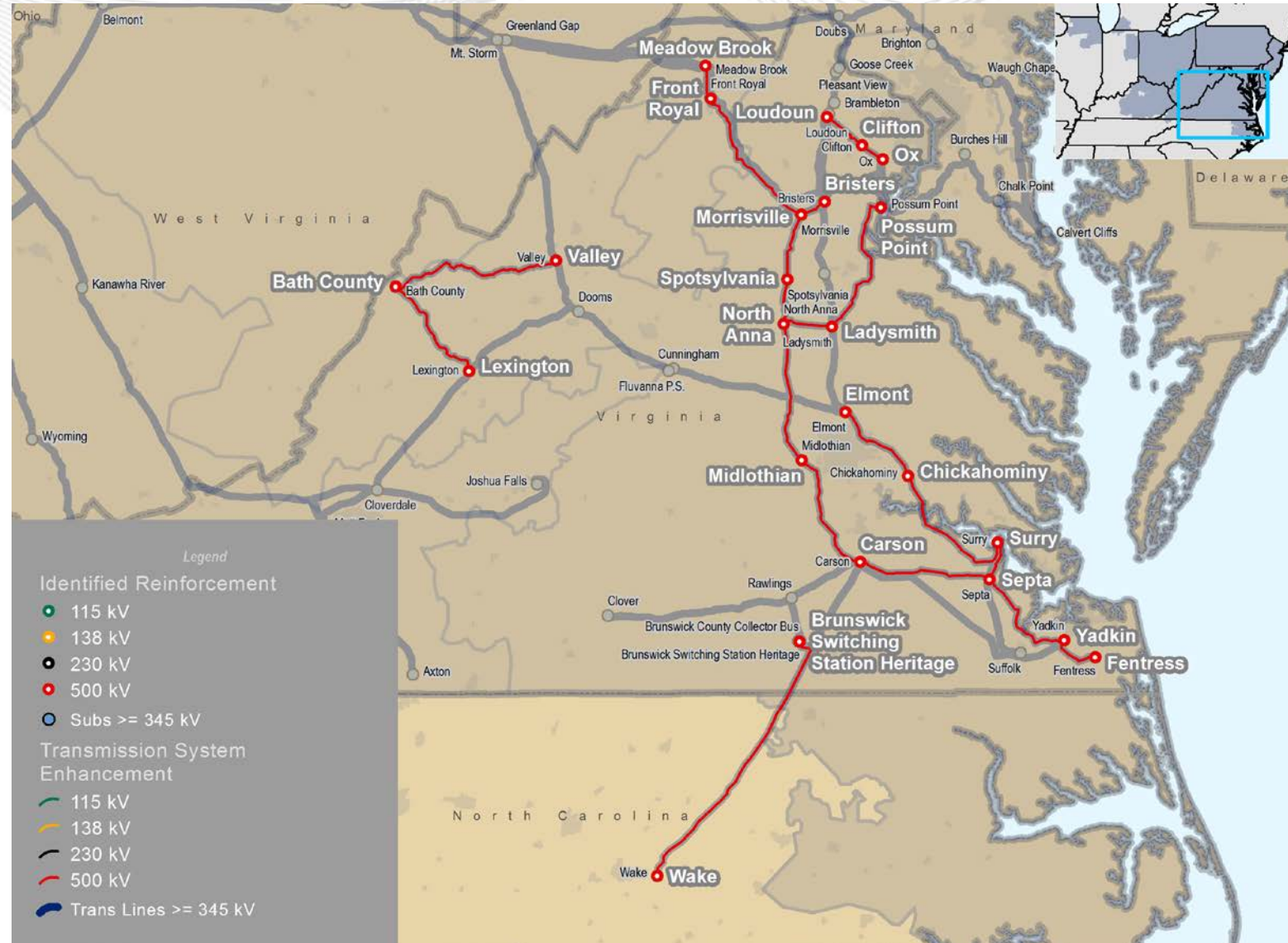




Dominion End Of Life Facilities

Facilities reaching their End of Life within the immediate to 5 year horizon

Line	Voltage (kV)	In-Service Year
SURRY - SEPTA	500	1972
NORTH ANNA - LADYSMITH	500	1973
SURRY - YADKIN	500	1970
SEPTA - YADKIN	500	1975
CHICKAHOMINY - ELMONT	500	1971
SEPTA - CARSON	500	1972
SURRY - CHICKAHOMINY	500	1971
YADKIN - FENTRESS	500	1975
BATH COUNTY - VALLEY	500	1984
BATH COUNTY - LEXINGTON	500	1984
NORTH ANNA SPOTSYLVANIA	500	1976

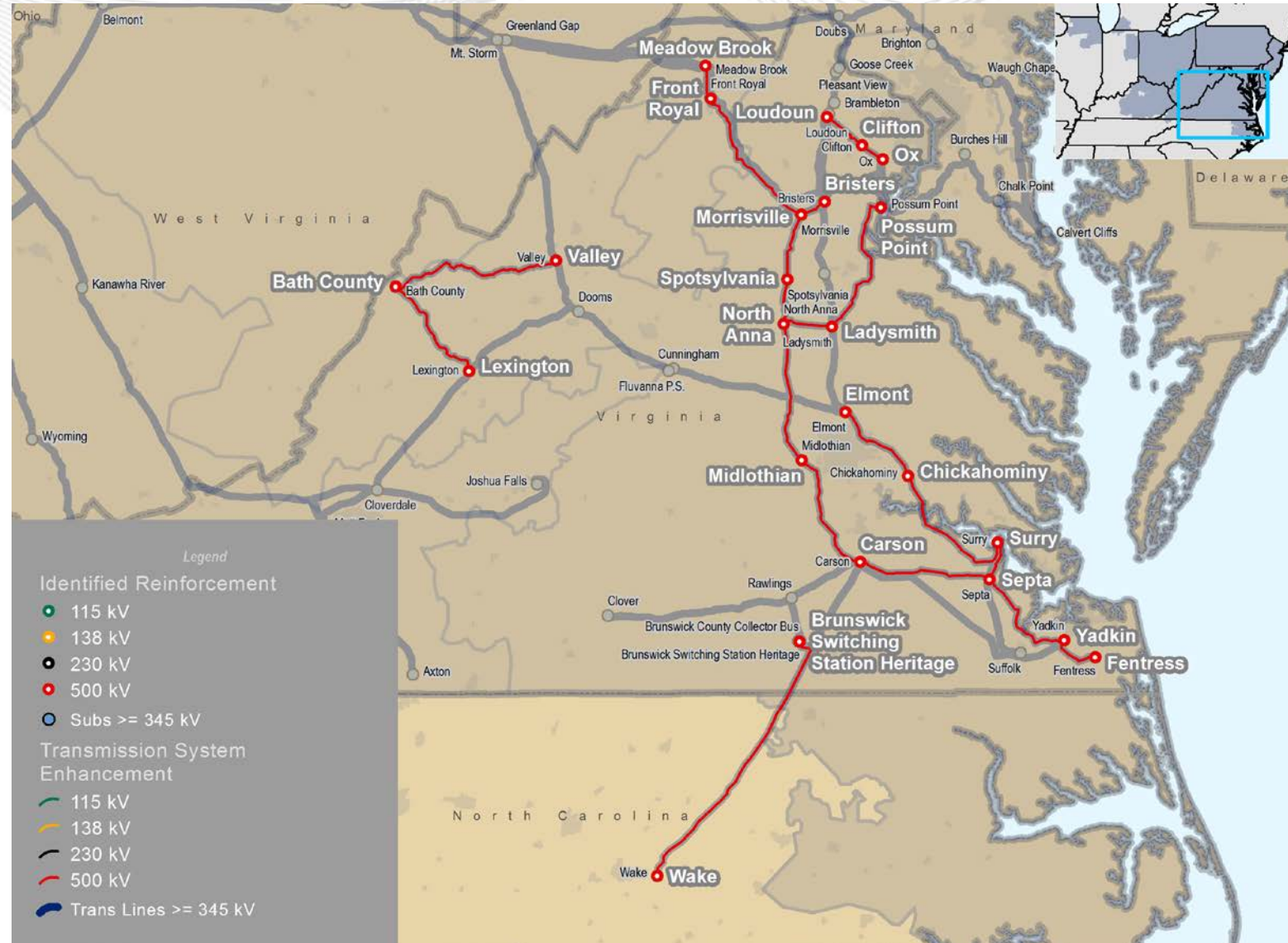




Dominion End Of Life Facilities

Facilities reaching their End of Life within the immediate to 5 year horizon

Line	Voltage (kV)	In-Service Year
BRISTERS - MORRISVILLE	500	1976
HERITAGE - WAKE INTERTIE	500	1972
MORRISVILLE - SPOTSYLVANIA	500	1976
POSSUM POINT - LADYSMITH	500	1984
CARSON - MIDLOTHIAN	500	1981
MORRISVILLE - FRONT ROYAL	500	1979
MEADOWBROOK - MORRISVILLE	500	1979
LOUDOUN - CLIFTON	500	1970
NORTH ANNA - MIDLOTHIAN	500	1979
CLIFTON - OX	500	1970

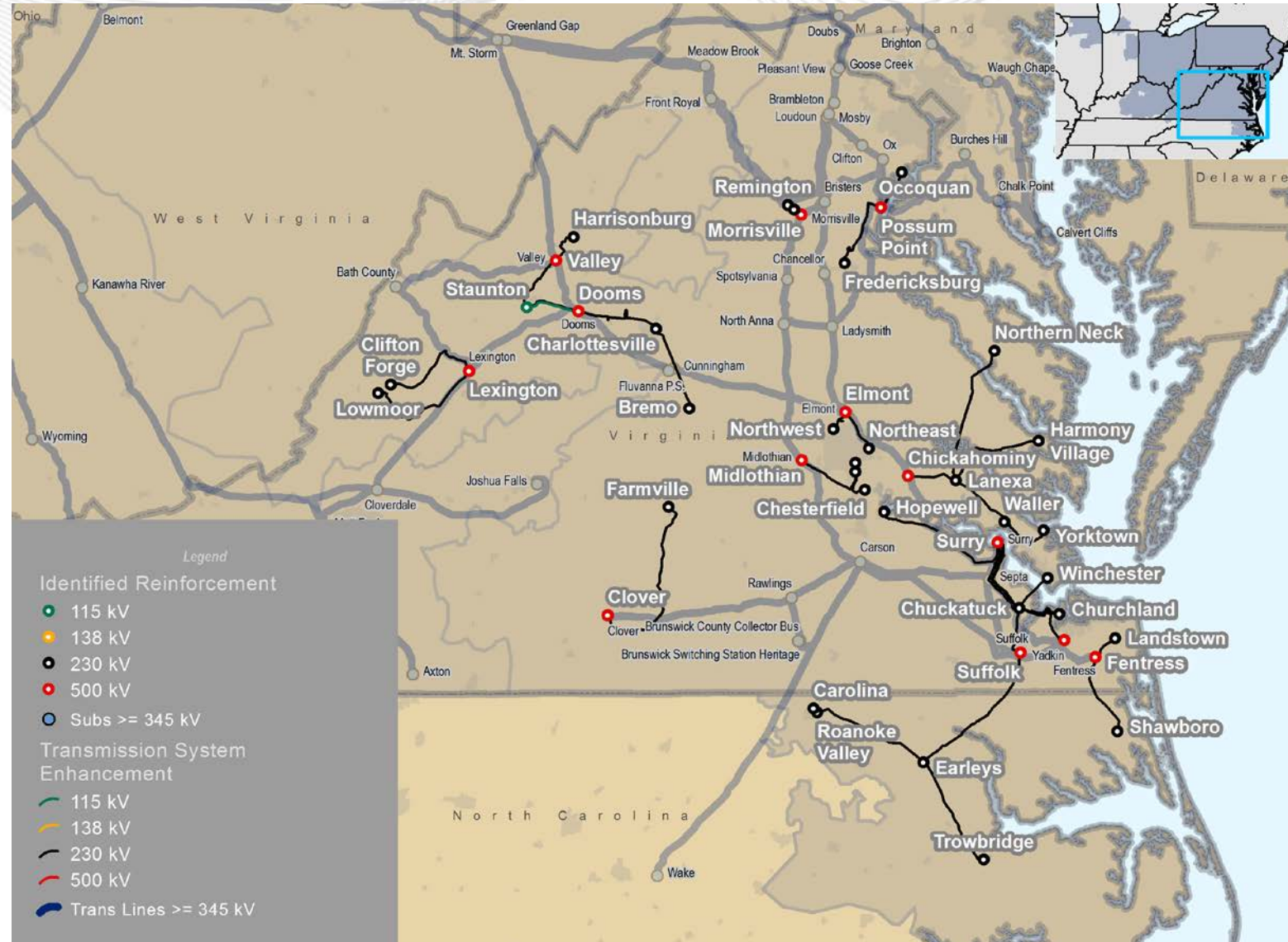




Dominion End Of Life Facilities

Facilities reaching their End of Life within the immediate to 5 year horizon

Line	Voltage (kV)	In-Service Year
LANEXA - HARMONY VILLAGE	230	1969
FREDERICKSBURG -POSSUM POINT	230	1978
SURRY - HOPEWELL	230	1969
WINCHESTER - Surry	230	1969
SURRY - CHURCHLAND	230	1971
CHICKAHOMINY - WALLER	230	1975
YADKIN - SURRY	230	1969
NORTHERN NECK - LANEXA	230	1969
CHICKAHOMINY - LANEXA	230	1975
MARSH RUN CT - REMINGTON	230	1976
POSSUM POINT - OCCOQUAN	230	1975
WALLER - YORKTOWN	230	1974
NORTHWEST - ELMONT	230	1978
BASIN - CHESTERFIELD	230	1973
ROANOKE VALLEY - EARLEYS	230	1979
SUFFOLK - - EARLYS	230	1971
NORTHEAST - ELMONT	230	1972
EARLEYS - TROWBRIDGE	230	1979

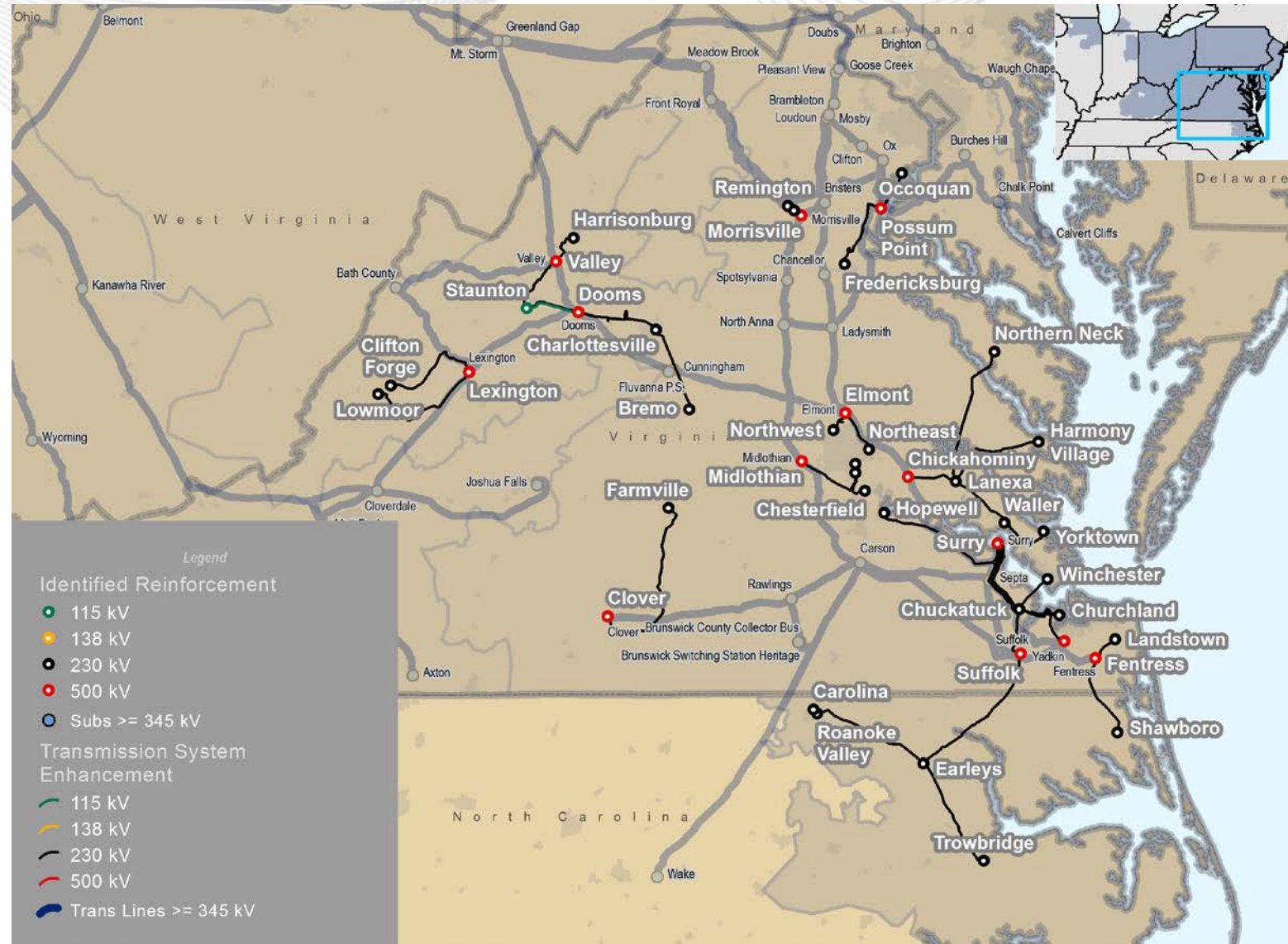




Dominion End Of Life Facilities

Facilities reaching their End of Life within the immediate to 5 year horizon

Line	Voltage (kV)	In-Service Year
EARLEYS - TROWBRIDGE	230	1979
SUFFOLK - CHUCKATUCK	230	1974
LEXINGTON - CLIFTON FORGE	230	1970
DOOMS - VALLEY	230	1981
LEXINGTON - LOWMOOR	230	1985
STAUNTON - DOOMS	230	1981
MIDLOTHIAN - SPRUANCE	230	1973
CHARLOTTESVILLE - DOOMS	230	1989
CHARLOTTESVILLE - BREMO	230	1989
FENTRESS - SHAWBORO	230	1976
MORRISVILLE - MARSH RUN	230	1976
LANDSTOWN - FENTRESS	230	1975
HARRISONBURG - VALLEY	230	1975
FARMVILLE - CLOVER	230	1976
ROANOKE VALLEY - CAROLINA	230	1979



- PJM will continue to assess and prioritize the reliability impacts due to the End of Life Facilities and evaluate the need for Proposal Windows

End of Life Facilities Summary		
End of Life Need Date	# of facilities	Voltage Level
Immediate Need (0-3 years)	4	500 kV
3 – 5 years	41	115 kV– 230 kV
5 – 10 years	21	500 kV
Beyond 10 years	32	230 kV