Appendix D

Projects Investigated for Resource Supply Options Studied

January 25, 2007

600 MW Resource Supply Options Studied
Projects to Increase Progress East Imports[1,2]

Primary Alternative Investigated	Issue Identified	TO	Lead Time (years)	Duke 600 MW	(M)	SCEG 600 MW	(M)	SCPSA 600 MW	(M)	DVP 600 MW	(M)	SOCO 600 MW	(M)	TVA 600 MW	(M)	AEP 600 MW	(M)	AEP/AEP 1200 MW	(M)	AEP/DVP 1200 MW	(M)
Buck-Asheboro 230 kV Line, Construct 50 mile line (2014 TAP Project-$40M)	Address loadings on Badin-Tillery-Biscoe-Asheboro 115 kV corridor and Rockingham-Lilesville 230 kV Lines. Delays need for Cape Fear-Siler City 230 kV and Harris-Durham 230 kV lines.	Progress & Duke	5	6/1/2011	$12.00	6/1/2011	$12.00	6/1/2011	$12.00	6/1/2011	$12.00	6/1/2011	$12.00	6/1/2011	$12.00	6/1/2011	$12.00	6/1/2011	$12.00	6/1/2011	$12.00
Camden 230 kV Sub, Install 230 kV reactor on (SC) Lugoff terminal	Camden-Camden Junction 115 kV	Progress	3			6/1/2012	$5.10	6/1/2012	$5.10												
Falls 230 kV Sub, Install #2 230/115 kV bank (2013 TAP project-$5.2M)	Falls 230/115 kV	Progress	3	6/1/2012	$0.50	6/1/2012	$0.50	6/1/2012	$0.50	6/1/2013	$0.00	6/1/2012	$0.50	6/1/2012	$0.50	6/1/2012	$0.50	6/1/2012	$0.50		
Fay-Fay East 230 kV Line, Replace CB, wavetrap, line switches (2014 TAP project-$425,000)	Fay-Fay East 230 kV	Progress	3	6/1/2012	$0.09	6/1/2011	$0.13	6/1/2011	$0.13	6/1/2012	$0.09	6/1/2011	$0.13	6/1/2011	$0.13	6/1/2012	$0.09	6/1/2012	$0.09	6/1/2013	$0.04
Fay-Ft. Bragg Woodruff St 230 kV Line, Replace line switch (2012 TAP project-$250,000)	Fay-Fay Ft. Bragg Woodruff 230 kV	Progress	3	6/1/2011	$0.03	6/1/2011	$0.03	6/1/2011	$0.03	6/1/2011	$0.03	6/1/2011	$0.03	6/1/2011	$0.03	6/1/2011	$0.03	6/1/2011	$0.03		
Harris-Durham 230 kV Line, Convert & construct new 230 kV line (2016 TAP Project-$88M)	Durham-Cary Regency Park 230 kV	Progress	5	6/1/2014	$17.60	6/1/2014	$17.60	6/1/2014	$17.60	6/1/2014	$17.60	6/1/2014	$17.60	6/1/2014	$17.60	6/1/2014	$17.60	6/1/2014	$17.60	6/1/2015	$8.80
Method-E. Durham 230 kV Line, Rebuild Blue Ridge-E. Durham section & replace line switches	Method-E. Durham 230 kV	Progress	3	6/1/2014	$6.20			6/1/2015	$6.20												
Method-E. Durham 230 kV Line, Rebuild Method-Blue Ridge section & replace line switches	Method-E. Durham 230 kV	Progress	4	6/1/2014	$7.30			6/1/2015	$7.30												
Person-Milburnie 230 kV Line, Uprate Rox Cog-Falls section	Milburnie-Person 230 kV	Progress	3	6/1/2013	$2.50	6/1/2014	$2.50	6/1/2014	$2.50	6/1/2014	$2.50	6/1/2014	$2.50	6/1/2014	$2.50	6/1/2014	$2.50	6/1/2014	$2.50	6/1/2013	$2.50
Wake 500 kV Sub, Install #3-500/230 kV bank (2016 TAP Project - $21M)	Wake 500/230 kV Bank 1 / 2	Progress	4	6/1/2012	$8.40	6/1/2012	$8.40	6/1/2012	$8.40	6/1/2012	$8.40	6/1/2012	$8.40	6/1/2012	$8.40	6/1/2012	$8.40	6/1/2011	$11.00	6/1/2011	$11.00
West End 230 kV Sub, Install 230 kV reactor on Cape Fear terminal	Rockingham-West End 230 kV Line West End-Cape Fear 230 kV	Progress	3	6/1/2013	$5.00	6/1/2013	$5.00	6/1/2013	$5.00	6/1/2013	$5.00	6/1/2013	$5.00	6/1/2011	$5.00	6/1/2013	$5.00	6/1/2013	$5.00	6/1/2013	$5.00
Harrisburg-Oakboro 230 kV Line bundling	Harrisburg-Oakboro 230 kV Line overload	Duke	3	6/1/2013[3]	$24.00							Not studied		Not studied				6/1/2015[3]	$24.00	6/1/2016[3]	$24.00

[1].The tables in Appendix D reflect the date the project is needed in order to implement the resource supply option studied.

[2] The tables in Appendix D contain the estimated incremental costs of the transmission upgrades required to import an additional 600 MW or 1200 MW into the Progress East and/or Duke systems. The costs are incremental to the total transmission capital plans of Progress and Duke. Project costs represent either: (i) the estimated acceleration cost of an existing project within the 10-year planning horizon; or (ii) the estimated total cost of a new project that would be needed in the 10-year planning horizon to support the increased import. The costs are expressed in nominal dollars. Also, the projects required to increase the transfer capability over each of the interfaces were determined independently. Therefore, the projects and cost estimates in the tables in Appendix D do not reflect the requirements for simultaneously increasing transfer capability over two or more of the interfaces.

[3] The project date is based on Progress TRM case study results. Results based on Duke planning criteria result in a later project date.

600 MW Resource Supply Options Studied
Projects to Increase Progress East Imports (Continued)

Primary Alternative Investigated	Issue Identified	TO	Lead Time (years)	Duke 600 MW	(M)	SCEG 600 MW	(M)	SCPSA 600 MW	(M)	DVP 600 MW	(M)	SOCO 600 MW	(M)	TVA 600 MW	(M)	AEP 600 MW	(M)	AEP/AEP 1200 MW	(M)	AEP/DVP 1200 MW	(M)
Antioch 500/230 kV transformers replacement	Antioch 500/230 kV transformers overload	Duke	5							6/1/2012	$2.00	Not studied		Not studied		6/1/2012	$2.00	6/1/2011	$3.00	6/1/2011	$3.00
Eno-Pleasant Garden 230 kV line bundling	Eno-Pleasant Garden 230 kV Line overload	Duke	3	6/1/2014[3]	$47.00							Not studied		Not studied							
Estimated Incremental Cost (Nominal $M)					**$130.62**		**$51.26**		**$64.76**		**$47.62**		**$46.16**		**$46.16**		**$48.12**		**$75.72**		**$66.34**

600 MW Resource Supply Options Studied
Projects to Increase Duke Imports[1,2]

Primary Alternative Investigated	Issue Identified	TO	Lead Time (years)	CPLE 600 MW	(M)	SCEG 600 MW	(M)	SCPSA 600 MW	(M)	DVP 600 MW	(M)	SOCO 600 MW	(M)	TVA 600 MW	(M)	AEP 600 MW	(M)	AEP/AEP 1200 MW	(M)	AEP/DVP 1200 MW	(M)
Antioch 500/230 kV transformers replacement	Antioch 500/230 kV transformers overload	Duke	5	2013	$1.00	2013	$1.00	2013	$1.00	Not Studied		2012	$2.00	2012	$2.00	2011	$3.00	2011	$3.00	2011	$3.00
Estimated Incremental Cost (Nominal $M)					**$1.00**		**$1.00**		**$1.00**		**$0.00**		**$2.00**		**$2.00**		**$3.00**		**$3.00**		**$3.00**

[1] The tables in Appendix D reflect the date the project is needed in order to implement the resource supply option studied.

[2] The tables in Appendix D contain the estimated incremental costs of the transmission upgrades required to import an additional 600 MW or 1200 MW into the Progress East and/or Duke systems. The costs are incremental to the total transmission capital plans of Progress and Duke. Project costs represent either: (i) the estimated acceleration cost of an existing project within the 10-year planning horizon; or (ii) the estimated total cost of a new project that would be needed in the 10-year planning horizon to support the increased import. The costs are expressed in nominal dollars. Also, the projects required to increase the transfer capability over each of the interfaces were determined independently. Therefore, the projects and cost estimates in the tables in Appendix D do not reflect the requirements for simultaneously increasing transfer capability over two or more of the interfaces.

[3] The project date is based on Progress TRM case study results. Results based on Duke planning criteria result in a later project date.