



**OPTIONS TO BUILD – TRANSMISSION CLASS
MAJOR SUBSTATION EQUIPMENT APPROVED VENDORS**

This document shall be used by the project developer for obtaining major substation equipment that conforms to PPL Electric Utilities requirements for qualified source(s) of such equipment. Additional PPL equipment specifications will apply based on the nature and location of the project.

This list is confidential, for the specific development project it was issued for and shall not be disseminated to vendors or other third parties. This list is subject to change and shall not be used as a reference for any other development

POWER TRANSFORMERS (3-WINDING AUTO W/ LTC) – BULK POWER/REGIONAL SUBSTATIONS

VOLTAGE (KV)	CAPACITY ONAN/ONAF/ONAF (MVA)	UNIT CONFIG	APPROVED MANUFACTURERS (APPROVED PLANT)	NOTES
500-230	250 **	1Ø	SMIT (Nijmegen NE) HYUNDAI (Ulsan Korea)	
500-138	340 **	3Ø	SMIT (Nijmegen NE) HYUNDAI (Ulsan Korea)	
230-138	340 **	3Ø	SMIT (Nijmegen NE) HYUNDAI (Ulsan Korea) WAUKESHA (Waukesha WI)	
230-69	170	3Ø	WAUKESHA (Waukesha WI) HYUNDAI (Montgomery AL)	
138-69	170	3Ø	WAUKESHA (Waukesha WI) HYUNDAI (Montgomery AL)	

** -- ONAN/ODAF/ODAF also permitted.

POWER CIRCUIT BREAKERS

VOLTAGE (KV)	CONTINUOUS CURRENT RATING (AMPS)	BIL (KV)	INTERRUPTING RATING (KAIC) *	INSULATION TYPE	APPROVED VENDORS	MODEL	NOTES
500	3000	1800	63 50	SF6	ABB ²	550PM	
230	3000	1050	63 50	SF6	MEPPI ²	200-SFMT	
138	3000 2000	650	40	SF6	MEPPI ²	120-SFMT	
69	3000	350	40	SF6	SIEMENS ²	SPS2	
12	3000 2000 1200	110	25	VACUUM	MEPPI ²	17VD25	

* -- Interrupting rating requirements shall be determined by system location and future expansion planning. PPL will advise of the minimum KAIC requirements for a specific developer project.

² – circuit breaker alliance partner; sole source.

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METAL-OXIDE SURGE ARRESTERS

VOLTAGE (KV)	CLASS	DUTY CYCLE (KV)	MCOV (KV)	APPROVED VENDORS	NOTES
500	STATION	396	318	ABB	
230	STATION	180	144	ABB SIEMENS OHIO BRASS MACLEAN GE COOPER POWER	
138	STATION	132	106	ABB OHIO BRASS MACLEAN GE COOPER POWER	
69	STATION	60	48	ABB OHIO BRASS MACLEAN GE COOPER POWER	
12	STATION	18	15.3	ABB OHIO BRASS MACLEAN GE COOPER POWER	

AIR/DISCONNECT SWITCHES

VOLTAGE (KV)	CONTINUOUS CURRENT RATING (AMPS)	CLOSE & LATCH RATING (KAIC)	BIL (KV)	PHYSICAL STYLE(S) *	APPROVED VENDORS	MODEL	NOTES
500	3000	100	1800 1550	3IVB-MO	PASCOR ³	TTR-6	
230	3000 2000	100	1050 900	3IVB-MO TSVB-MO	PASCOR ³	TTR-8	
138	3000 2000 1200	100	650 550	3IVB-MO 3IVB-HO	CLEVELAND PRICE ³	V2-CA	S1
69	2000 1200	61-100	350	3IVB-MO 3IVB-HO	CLEVELAND PRICE ³	V2-CA	S1

* -- Legend for Physical Styles:

3IVB-MO	3-insulator vertical break style, motorized
3IVB-HO	3-insulator vertical break style, hand operated (worm gear mechanism)
TSVB-MO	Tandem switch (two vertical-break switch poles on a common base sharing the same jaw-end post insulator), both switches motorized

³ – switch alliance partner; sole source.

Switch Notes:

S1	All circuit breakers used in a "network line" application shall have motorized disconnect switches on both sides of the breaker for automatic isolation for a failed/stuck breaker event.
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POTENTIAL TRANSFORMERS

VOLTAGE (KV)	BIL (KV)	APPROVED VENDORS	MODEL	NOTES
500	---	---	---	N/A
230	1050	ABB-KUHLMAN	UTF	
138	650	ABB-KUHLMAN	POF	
69	350	ABB-KUHLMAN	POF	

COUPLING CAPACITOR VOLTAGE TRANSFORMERS (with or without carrier accessories)

VOLTAGE (KV)	BIL (KV)	RATIO	ACCURACY CLASS	APPROVED VENDOR(S) [MODEL]	NOTES
500	1800	2500/4350:1 (288800-115/66.4V)	0.3ZZ METERING	TRENCH [TEMP] ALSTOM/AREVA [OTCF]	
230	1050	1155/2000:1 (132800-115/66.4V)	0.3ZZ METERING	TRENCH [TEMP] ALSTOM/AREVA [OTCF]	
138	650	700/1200:1 (80500-115/66.4v)	0.3ZZ METERING	TRENCH [TEVF] ALSTOM/AREVA [OTCF]	
69	350	350/600:1 (132800-115/66.4V)	0.3ZZ METERING	TRENCH [TEVF] ALSTOM/AREVA [OTCF]	

POWER VOLTAGE TRANSFORMERS

VOLTAGE (KV)	BIL (KV)	APPROVED VENDORS	MODEL	NOTES
230	1050	ABB-KUHLMAN	SSVT-1050	
138	650	ABB-KUHLMAN	SSVT-650	