

*Table AR-5
Asset Renewal Circuit Breakers*

System Additions	Projected In-Service Year	Planning Zone	Need Category
Circuit breaker replacements	2012	Various	End of life, parts obsolescence (4 units) 69 kV
Circuit breaker replacements	2012	Various	Type U bushings (37 units) 69 kV
Circuit breaker replacements	2012	Various	Ratings (6 units) 69 kV
Circuit breaker replacements	2012	Various	Mechanism design issues (1 units) 69kV
Circuit breaker replacements	2012	Various	Type U Bushings (9 units) 138kV
Circuit breaker replacements	2012	Various	Planning stability issues (3 units) 138 KV
Circuit breaker replacements	2012	Various	Ratings (3 units) 138kV
Circuit breaker replacements	2013	Various	Type U Bushings (12 units) 69kV
Circuit breaker replacements	2013	Various	Planning stability issues (1 units) 69 KV
Circuit breaker replacements	2013	Various	Type S bushings (1 unit) 69 kV
Circuit breaker replacements	2013	Various	Type U Bushings (4 units) 138kV

*Table AR-5
Transmission System Additions – Asset Renewal Circuit Breakers (continued)*

System Additions	Projected In-Service Year	Planning Zone	Need Category
Circuit breaker replacements	2013	Various	End of life, part obsolescence (6 units) 138 kV
Circuit breaker replacements	2013	Various	EPA SF6 emission reduction (7units) 345 kV
Circuit breaker replacements	2014	Various	End of life, parts obsolescence (7 units) 138 kV
Circuit breaker replacements	2014	Various	Mechanism design issues (11 units) 69 kV
Circuit breaker replacements	2014	Various	Type U Bushings (4 units) 138kV
Circuit breaker replacements	2014	3	Type U Bushings (1 unit) 69kV
Circuit breaker replacements	2014	5	Over duty rating (1 unit) 138 kV
Circuit breaker replacements	2015	4	Mechanism design issues (7 units) 69 kV
Circuit breaker replacements	2015	4	End of life, parts obsolescence (1 units) 69 kV
Circuit breaker replacements	2015	Various	End of life, parts obsolescence (6 units) 138 kV
Circuit breaker replacements	2015	4	Bushing flange oil leak (4 units) 345 kV

*Table AR-5
Transmission System Additions – Asset Renewal Circuit Breakers (continued)*

System Additions	Projected In-Service Year	Planning Zone	Need Category
Circuit breaker replacements	2016-2021	Various	Mechanism design issues (23 units) 69 kV
Circuit breaker replacements	2016-2021	Various	End of life, parts obsolescence (6 units) 69 kV
Circuit breaker replacements	2016-2021	Various	Mechanism design issues (3 units) 138 kV
Circuit breaker replacements	2016-2021	Various	End of life, parts obsolescence (7 units) 138 kV
Circuit breaker replacements	2016-2021	Various	Bushing flange oil leak (21 units) 345 kV
Circuit breaker replacements	2016-2021	Various	End of life, parts obsolescence (8 units) 345 kV