Table PF-1
Projects included in the 2009 10-Year Assessment Model

System additions	Planning zone
Construct Stone Lake-Arrowhead 345-kV line	1
Install 1-75 MVAR capacitor bank and 1-75 MVAR inductor at Stone Lake 345 kV	1
Construct new Arrowhead 345-kV Substation, install 2-75 MVAR capacitor banks, 1-800 MVA PST and 1-800 MVA 345/230-kV transformer	1
Construct the new permanent Stone Lake 345/161-kV Substation	1
Construct Cranberry-Conover 115-kV line	1
Construct 138 kV bus and install 138/115-kV 150 MVA and 138/69-kV 60 MVA transformers at Conover Substation	1
Install 2-8.16 MVAR capacitor banks at the 9 Mile 69-kV Substation	2
Install second 138/69-kV transformer at Straits Substation	2
Install second 138/69-kV transformer at Hiawatha Substation	2
Rebuild Atlantic-Osceola 69-kV line (Laurium #1)	2
Uprate Winona-Atlantic 69-kV line clearance to 185 degrees F	2
Relocate Cedar Substation (North Lake)	2
Construct ring bus at the Pine River 69-kV Substation and replace 1-5.4 MVAR capacitor bank with 2-4.08 MVAR banks	2
Install 1-4.08 MVAR capacitor bank at Roberts 69-kV Substation	2
Uprate Empire-Forsyth 138-kV line to 302 MVA	2
Uprate Mass-Winona 69-kV line clearance to 185 degrees F	2
Install 2-4.08 MVAR capacitor banks at Munising 69-kV Substation	2
Uprate Chandler-Cornell 69-kV line clearance from 120 to 167 degrees F	2
Install 1-16.33 MVAR capacitor bank at Hiawatha 138-kV Substation	2
Install 2-16.33 MVAR capacitor bank at Perkins 138-kV Substation	2
Install 1-4.08 MVAR capacitor bank at L'Anse 69 kV	2
Expand the existing 69-kV capacitor bank from 5.4 to 8.1 MVAR at Richland Center Olson Substation and install 1-7.8 MVAR 12.4-kV capacitor bank at Brewer Substation	3
Construct a Rubicon-Hustisford 138-kV line	3
Rebuild Hustisford-Horicon 69 kV to 138 kV	3
Construct 138/69 kV substation at a site near Horicon and install a 138/69-kV transformer	3
Uprate X-17 Eden-Spring Green 138-kV line to achieve 167 degrees F line ratings	3
Construct new line from Southwest Delavan to Bristol at 138 kV and operate at 69 kV	3
Uprate X-19 Portage-Trienda 138-kV line to achieve a 321 MVA summer emergency rating	3
Install a temporary 24.5 MVAR 138-kV capacitor bank at Boxelder Substation (install 2008, remove in 2009)	3
Uprate Portage 138/69-kV transformer to achieve a 143 MVA summer emergency rating	3
Install 2-8.16 MVAR 69-kV capacitor banks at South Lake Geneva Substation	3
Construct a new 138-kV line from North Madison to Huiskamp	3
Construct a new 138/69-kV substation near Huiskamp and install a 138/69-kV transformer with a 187 MVA summer emergency rating	3
Convert Rock River to Bristol to Elkhorn 138-kV operation; rebuild Bristol with a new 138 kV bus	3

Table PF-1 (continued)
Projects included in the 2009 10-Year Assessment Model

System additions	Planning zone
Construct a Jefferson-Lake Mills-Stony Brook 138-kV line	3
Uprate 6632 Rockdale to Jefferson 138-kV line	3
Uprate X-8 Rockdale to Boxelder 138-kV line	3
Uprate 58751 Boxelder to Stony Brook 138-kV line	3
Install 2-24.5 MVAR 138 kV capacitor banks at Kilbourn Substation and install 2-24.5 MVAR 138-kV capacitor banks at Artesian Substation	3
Install 3-16.33 MVAR 138-kV capacitor banks at North Beaver Dam Substation	3
Uprate Y-51 Brick Church-Cobblestone 69-kV line to achieve a 115 MVA summer emergency rating	3
Construct a 345-kV substation at new Cypress; loop existing Forest Junction-Arcadian line into new Cypress Substation	4
String a new Ellinwood-Sunset Point 138-kV line on existing structures	4
Uprate North Appleton-Lawn Road-White Clay 138-kV line	4
Construct a 138-kV substation at new Cedar Ridge; loop existing Ohmstead-Kettle Moraine 138-kV line into new Cedar Ridge Substation	4
Install 2-1.2 MVAR distribution capacitor banks at Sister Bay 69 kV	4
Uprate North Appleton-Mason Street 138-kV line	4
Uprate North Appleton-Lost Dauphin 138-kV line	4
Uprate North Appleton-Fox River 345-kV line	4
Rebuild Crivitz-High Falls 69-kV double circuit line	4
Relocate Mishicot 138-kV Substation	4
Upgrade St. Martins 138-kV bus to 2000A	5
Upgrade St. Lawrence 138-kV bus	5
Reconductor Saukville-St Lawrence 138-kV line	5
Uprate Arcadian-Waukesha 138-kV lines KK9942/KK9962	5
Construct a 138-kV bus at Hale Substation to permit third Brookdale distribution transformer interconnection	5
Replace relaying on 230-kV circuits at Oak Creek	5
Replace two 345-kV circuit breakers at Pleasant Prairie Substation on the Racine and Zion lines with IPO breakers and upgrade relaying	5
Reconductor Oak Creek-Allerton 138-kV line	5
Install second 500 MVA 345/138-kV transformer at Oak Creek Substation	5
Loop Ramsey5-Harbor 138-kV line into Norwich and Kansas to form a new line from Ramsey-Norwich and Harbor-Kansas 138-kV lines	5
Replace CTs at Racine 345-kV Substation	5
Reconductor Oak Creek-Ramsey 138-kV line	5
Expand Oak Creek 345-kV switchyard to interconnect one new generator (Oak Creek Phase 1)	5