

Supporting
document 5.34

System Security - Emergency Control Scheme

2020-25 Revised
Regulatory Proposal
10 December 2019



Redesign and rebuild the existing UFLS scheme

Substation	Option 1			Option 2		
	Low performance using legacy relays where possible			High performance with modern relays only		
	Upgrade Cost	No. of existing relays to be recommissioned	No. of existing relays to be replaced	Upgrade Cost	No. of existing relays to be recommissioned	No. of existing relays to be replaced
Aldinga	\$ 24,000.00	4	0	\$ 24,000.00	4	0
Angas Creek	\$ 12,000.00	2	0	\$ 12,000.00	2	0
Angaston	\$ 768,000.00	2	7	\$ 972,000.00	0	9
Angle Vale	\$ 30,000.00	5	0	\$ 540,000.00	0	5
Ardrossan West Distribution	\$ 18,000.00	3	0	\$ 18,000.00	3	0
Ascot Park	\$ 648,000.00	0	6	\$ 648,000.00	0	6
Athol Park	\$ 342,000.00	1	3	\$ 432,000.00	0	4
Baroota	\$ 6,000.00	1	0	\$ 6,000.00	1	0
Berri	\$ 948,000.00	3	7	\$ 948,000.00	2	8
Blackpool	\$ 24,000.00	4	0	\$ 432,000.00	0	4
Blackwood	\$ 144,000.00	4	1	\$ 540,000.00	0	5
Blanche	\$ 432,000.00	0	3	\$ 432,000.00	0	3
Brinkworth 33kV	\$ 432,000.00	0	3	\$ 432,000.00	0	3
Bungama	\$ 18,000.00	3	0	\$ 18,000.00	3	0
Burnside	\$ 24,000.00	4	0	\$ 432,000.00	0	4
Campbelltown	\$ 30,000.00	5	0	\$ 540,000.00	0	5
Cape Jervis	\$ 6,000.00	1	0	\$ 144,000.00	0	1
Cavan	\$ 48,000.00	8	0	\$ 864,000.00	0	8
Cheltenham 11kV	\$ 18,000.00	3	0	\$ 324,000.00	0	3
Clare	\$ 432,000.00	0	4	\$ 432,000.00	0	4
Clarence Gardens	\$ 30,000.00	5	0	\$ 540,000.00	0	5
Cleve	\$ 144,000.00	1	0	\$ 144,000.00	0	1
Croydon	\$ 606,000.00	3	5	\$ 864,000.00	0	8
Croydon Park	\$ 540,000.00	0	5	\$ 540,000.00	0	5
Cudmore Park	\$ 450,000.00	1	4	\$ 540,000.00	0	5
Davenport West	\$ 18,000.00	3	0	\$ 156,000.00	2	1
Direk	\$ 42,000.00	7	0	\$ 756,000.00	0	7
Dorrien	\$ 324,000.00	6	0	\$ 720,000.00	0	6
Edinburgh	\$ 30,000.00	5	0	\$ 540,000.00	0	5
Elizabeth Downs	\$ 54,000.00	9	0	\$ 972,000.00	0	9
Elizabeth Heights	\$ 348,000.00	2	3	\$ 540,000.00	0	5
Elizabeth South	\$ 36,000.00	6	0	\$ 36,000.00	6	0
Evanston	\$ 162,000.00	7	1	\$ 864,000.00	0	8
Findon	\$ 432,000.00	0	4	\$ 432,000.00	0	4
Flinders Park	\$ 24,000.00	4	0	\$ 432,000.00	0	4
Fulham Gardens	\$ 462,000.00	3	4	\$ 756,000.00	0	7
Glanville	\$ 540,000.00	0	5	\$ 540,000.00	0	5
Glenelg North	\$ 546,000.00	1	5	\$ 546,000.00	1	5
Golden Grove	\$ 468,000.00	4	4	\$ 864,000.00	0	8
Hackham	\$ 18,000.00	3	0	\$ 324,000.00	0	3
Happy Valley Distribution	\$ 24,000.00	4	0	\$ 432,000.00	0	4
Harrow	\$ 24,000.00	4	0	\$ 432,000.00	0	4
Henley South	\$ 570,000.00	3	5	\$ 864,000.00	0	8
Hillcrest	\$ 36,000.00	6	0	\$ 648,000.00	0	6
HNA	\$ 12,000.00	2	0	\$ 12,000.00	2	0
Holden Hill	\$ 288,000.00	4	2	\$ 684,000.00	0	6
Hope Valley	\$ 12,000.00	2	0	\$ 216,000.00	0	2
Hummocks	\$ 24,000.00	4	0	\$ 24,000.00	4	0
Ingle Farm	\$ 42,000.00	7	0	\$ 756,000.00	0	7
Kadina East	\$ 24,000.00	4	0	\$ 24,000.00	4	0
Keith	\$ 348,000.00	4	3	\$ 864,000.00	0	7
Kent Town	\$ 18,000.00	3	0	\$ 324,000.00	0	3
Keswick	\$ 756,000.00	0	7	\$ 756,000.00	0	7
Kilburn Distribution	\$ 1,422,000.00	1	13	\$ 1,512,000.00	0	14
Kilburn South	\$ 42,000.00	5	0	\$ 540,000.00	0	5
Kilkenny	\$ 24,000.00	4	0	\$ 432,000.00	0	4
Kincraig	\$ 288,000.00	0	2	\$ 288,000.00	0	2
Kingswood	\$ 366,000.00	5	3	\$ 864,000.00	0	8
Largs North	\$ 450,000.00	1	4	\$ 540,000.00	0	5
LeFevre	\$ 582,000.00	7	5	\$ 1,296,000.00	0	12
Linden Park	\$ 360,000.00	4	3	\$ 756,000.00	0	7
Lonsdale	\$ 12,000.00	2	0	\$ 12,000.00	2	0
Lower Mitcham	\$ 342,000.00	1	3	\$ 432,000.00	0	4
Magill	\$ 12,000.00	2	0	\$ 12,000.00	2	0
Mannum	\$ 120,000.00	2	1	\$ 324,000.00	0	3
McLaren Flat TF1	\$ 30,000.00	3	0	\$ 324,000.00	0	3
Mobilong	\$ 18,000.00	3	0	\$ 18,000.00	3	0
Morphett Vale East	\$ 54,000.00	7	0	\$ 792,000.00	0	7
Morphettville	\$ 24,000.00	4	0	\$ 432,000.00	0	4
Mount Barker Distribution	\$ 30,000.00	5	0	\$ 336,000.00	2	3
Mount Barker South	\$ 12,000.00	2	0	\$ 12,000.00	2	0
Mount Gambier 132kV/33kV/11kV	\$ 1,008,000.00	0	7	\$ 1,008,000.00	0	7
New Richmond	\$ 780,000.00	2	7	\$ 972,000.00	0	9
Noarlunga Centre	\$ 246,000.00	3	2	\$ 540,000.00	0	5
North Unley	\$ 432,000.00	0	4	\$ 432,000.00	0	4
North West Bend	\$ 12,000.00	2	0	\$ 12,000.00	2	0
Northfield	\$ 258,000.00	1	2	\$ 360,000.00	0	3
Norwood	\$ 606,000.00	9	5	\$ 1,410,000.00	1	13
Oaklands	\$ 660,000.00	2	6	\$ 660,000.00	2	6
Panorama	\$ 42,000.00	5	0	\$ 540,000.00	0	5
Parafield Gardens	\$ 36,000.00	6	0	\$ 648,000.00	0	6
Paralowie	\$ 240,000.00	2	2	\$ 432,000.00	0	4
Penfield	\$ 48,000.00	8	0	\$ 864,000.00	0	8
Penola West	\$ 288,000.00	2	0	\$ 288,000.00	0	2
Plympton	\$ 36,000.00	6	0	\$ 36,000.00	6	0
Port Adelaide	\$ 36,000.00	6	0	\$ 648,000.00	0	6
Port Adelaide North	\$ 354,000.00	1	5	\$ 546,000.00	1	5
Port Lincoln Terminal	\$ 432,000.00	0	3	\$ 432,000.00	0	3
Port Noarlunga	\$ 30,000.00	5	0	\$ 540,000.00	0	5
Port Pirie	\$ 288,000.00	0	2	\$ 288,000.00	0	2
Port Pirie South	\$ 432,000.00	0	4	\$ 432,000.00	0	4
Port Stanvac	\$ 474,000.00	5	4	\$ 972,000.00	0	9
Prospect	\$ 258,000.00	5	2	\$ 552,000.00	2	5
Queenstown	\$ 540,000.00	0	5	\$ 540,000.00	0	5
Salisbury	\$ 798,000.00	5	7	\$ 1,296,000.00	0	12
Seacombe	\$ 252,000.00	6	2	\$ 864,000.00	0	8
Seaford	\$ 24,000.00	2	0	\$ 216,000.00	0	2
Sheidow Park	\$ 246,000.00	3	2	\$ 540,000.00	0	5
Smithfield West	\$ 18,000.00	3	0	\$ 324,000.00	0	3
Smorgon Steel	\$ 6,000.00	1	0	\$ 108,000.00	0	1
Snuggery	\$ 780,000.00	7	3	\$ 1,056,000.00	2	8
Tailem Bend	\$ 30,000.00	3	0	\$ 432,000.00	0	3
Tea Tree Gully	\$ 36,000.00	6	0	\$ 648,000.00	0	6
Templers	\$ 576,000.00	0	4	\$ 576,000.00	0	4
Thebarton	\$ 462,000.00	3	4	\$ 552,000.00	2	5
Tonsley Park	\$ 30,000.00	3	0	\$ 324,000.00	0	3
Two Wells	\$ 6,000.00	1	0	\$ 108,000.00	0	1
Virginia	\$ 30,000.00	3	0	\$ 324,000.00	0	3
Waterloo	\$ 24,000.00	4	0	\$ 24,000.00	4	0
Whyalla Central	\$ 24,000.00	4	0	\$ 24,000.00	4	0
Willunga	\$ 48,000.00	4	0	\$ 240,000.00	2	2
Woodville 11kV	\$ 24,000.00	4	0	\$ 432,000.00	0	4
Wudinna	\$ 12,000.00	2	0	\$ 150,000.00	1	1
Yankalilla	\$ 30,000.00	3	0	\$ 324,000.00	0	3
Total	\$ 27,036,000.00	365	207	\$ 55,968,000.00	74	498

Expand the scope of existing UFLS Scheme

Substation	Option 1 Low performance using legacy relays where possible			Option 2 High performance with modern relays only		
	Upgrade Cost	No. of existing relays to be recommissioned	No. of existing relays to be replaced	Upgrade Cost	No. of existing relays to be recommissioned	No. of existing relays to be replaced
Campbelltown	\$ 12,000.00	2	0	\$ 216,000.00	0	2
Cape Jervis	\$ 6,000.00	1	0	\$ 6,000.00	1	0
Clare Substation	\$ 6,000.00	1	0	\$ 6,000.00	1	0
Cleve	\$ 108,000.00	0	1	\$ 108,000.00	0	1
Coromandel Place 11kV	\$ 2,160,000.00	0	20	\$ 2,160,000.00	0	20
Dalrymple	\$ 288,000.00	0	2	\$ 288,000.00	0	2
Davenport West	\$ 6,000.00	1	0	\$ 144,000.00	0	1
East Tce 11kV	\$ 2,160,000.00	0	20	\$ 2,160,000.00	0	20
East Terrace 33kV	\$ 36,000.00	6	0	\$ 36,000.00	6	0
Edinburgh	\$ 24,000.00	4	0	\$ 432,000.00	0	4
Elizabeth South	\$ 54,000.00	9	0	\$ 54,000.00	9	0
Flinders Park	\$ 12,000.00	2	0	\$ 216,000.00	0	2
Golden Grove	\$ 6,000.00	1	0	\$ 108,000.00	0	1
Happy Valley	\$ 12,000.00	2	0	\$ 216,000.00	0	2
Hindley Street 11kV	\$ 1,638,000.00	3	15	\$ 1,944,000.00	0	18
Hindley Street 33KV	\$ 1,152,000.00	0	8	\$ 1,152,000.00	0	8
Hindley Street 66kV	\$ 6,000.00	1	0	\$ 6,000.00	1	0
Holden Hill	\$ 216,000.00	0	2	\$ 216,000.00	0	2
Hope Valley	\$ 6,000.00	1	0	\$ 108,000.00	0	1
Iron Duke	\$ 6,000.00	1	0	\$ 6,000.00	1	0
Kanmantoo	\$ 108,000.00	0	1	\$ 108,000.00	0	1
Kent Town	\$ 12,000.00	2	0	\$ 216,000.00	0	2
Keswick	\$ 234,000.00	1	2	\$ 324,000.00	0	3
Kilburn	\$ 216,000.00	0	2	\$ 216,000.00	0	2
Kilkenny	\$ 18,000.00	3	0	\$ 324,000.00	0	3
Kincraig	\$ 144,000.00	0	1	\$ 144,000.00	0	1
Leigh Creek South	\$ 216,000.00	0	2	\$ 216,000.00	0	2
Lonsdale	\$ 12,000.00	2	0	\$ 12,000.00	2	0
Morphett Vale East	\$ 6,000.00	1	0	\$ 108,000.00	0	1
Mount Barker	\$ 18,000.00	3	0	\$ 324,000.00	0	3
Mt Gunson	\$ 288,000.00	0	2	\$ 288,000.00	0	2
Myponga	\$ 432,000.00	0	4	\$ 432,000.00	0	4
Neuroodla	\$ 144,000.00	0	1	\$ 144,000.00	0	1
Northfield	\$ 126,000.00	1	1	\$ 216,000.00	0	2
Panorama	\$ 18,000.00	3	0	\$ 324,000.00	0	3
Parafield Gardens	\$ 6,000.00	1	0	\$ 108,000.00	0	1
Port Lincoln Terminal	\$ 108,000.00	0	1	\$ 108,000.00	0	1
Port Pirie	\$ 108,000.00	0	1	\$ 108,000.00	0	1
Port Pirie South	\$ 18,000.00	1	0	\$ 108,000.00	0	1
Port Stanvac	\$ 222,000.00	1	2	\$ 324,000.00	0	3
Seacombe	\$ 18,000.00	3	0	\$ 324,000.00	0	3
Seacombe 11kV	\$ 6,000.00	1	0	\$ 108,000.00	0	1
Tonsley Park	\$ 18,000.00	3	0	\$ 324,000.00	0	3
Two Wells	\$ 6,000.00	1	0	\$ 108,000.00	0	1
Whitemore 66kV	\$ 6,000.00	1	0	\$ 6,000.00	1	0
Whitmore Square 11kV	\$ 1,944,000.00	0	18	\$ 1,944,000.00	0	18
Whyalla Terminal	\$ 444,000.00	2	3	\$ 720,000.00	0	5
Woodville	\$ 6,000.00	1	0	\$ 108,000.00	0	1
Woodville 33kV	\$ 18,000.00	1	0	\$ 144,000.00	0	1
Wudinna	\$ 216,000.00	0	2	\$ 216,000.00	0	2
Yadnarie	\$ 288,000.00	0	2	\$ 288,000.00	0	2
Yankalilla 33kV	\$ 6,000.00	1	0	\$ 6,000.00	1	0
Total	\$ 13,344,000.00	68	113	\$ 36,060,000.00	23	158