

APPENDIX A: TABLES FOR ELD WITH TRANSMISSION LINE LOSSES FOR NINE UNIT

Table 1. 9-unit system Lambda method with losses

Demand (MW)	P1 (MW)	P2 (MW)	P3 (MW)	P4 (MW)	P5 (MW)	P6 (MW)	P7 (MW)	P8 (MW)	P9 (MW)	Loss (MW)	Fuel Cost (Rs/hr)	Lambda
700	100	100	50	50	150.13	50	104.86	50	50	4.9879	7897.6	8.2031
900	100	117.04	50	94.987	201.52	50.665	50.537	154.51	58.537	7.9715	9562.4	8.4105
1100	295.61	284.75	98.38	300	300	158.87	180	206.73	198.66	38.619	19106	9.0439
1400	382.87	400	185.14	300	300	300	200	220	200	54.463	22263	10.327
1700	100	100	50	50	80	50	50	50	50	3.3653	6900.8	7.9959

Table 2. 9-unit system PSO method with losses

Demand (MW)	P1 (MW)	P2 (MW)	P3 (MW)	P4 (MW)	P5 (MW)	P6 (MW)	P7 (MW)	P8 (MW)	P9 (MW)	Loss (MW)	Fuel Cost (Rs/hr)
700	100	100	50	50	150.13	50	104.86	50	50	4.9879	7897.6
900	100	117.03	50	94.995	201.51	50.604	154.52	58.537	80.776	7.9714	9562.4
1100	121.07	143.41	50	139.53	230.54	67.208	180	80.954	98.954	11.67	11257
1400	166.61	186.86	57.82	212.97	278.63	94.776	180	118.99	129.08	18.835	13851
1700	202.84	233.56	75.152	291.73	300	124.61	180	158.14	161.58	27.625	16508

Table 3. 9-unit system GA method with losses

Demand (MW)	P1 (MW)	P2 (MW)	P3 (MW)	P4 (MW)	P5 (MW)	P6 (MW)	P7 (MW)	P8 (MW)	P9 (MW)	Loss (MW)	Fuel Cost (Rs/hr)
700	100	100	50	50	150.13	50	104.86	50	50	4.9879	7897.6
900	100	117.03	50	94.995	201.51	50.604	154.52	58.537	80.776	7.9714	9562.4
1100	121.07	143.41	50	139.53	230.54	67.208	180	80.954	98.954	11.67	11257
1400	166.61	186.86	57.82	212.97	278.63	94.776	180	118.99	129.08	18.835	13851
1700	202.84	233.56	75.152	291.73	300	124.61	180	158.14	161.58	27.625	16508

Table 4. Cost per Hour for Different Methods at Varying Demands

SL (NO)	Demand (MW)	Cost (Rs/hr) GA	Cost (Rs/hr) Lambda	Cost (Rs/hr) PSO
1	700	7897.6	7897.6	7897.6
2	900	9562.4	9562.4	9562.4
3	1100	11257	19106	11257
4	1400	13851	22263	13851
5	1700	16508	6900.8	16508

Table 5. Loss per Hour for Different Methods at Varying Demands

SL (NO)	Demand (MW)	Cost (Rs/hr) GA	Cost (Rs/hr) Lambda	Cost (Rs/hr) PSO
1	700	4.9786	4.9879	4.9879
2	900	7.9696	7.9715	7.9714
3	1100	11.681	38.619	11.67
4	1400	18.822	54.463	18.835
5	1700	27.674	3.3653	27.625