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MISO Generator Interconnection Cycle “DPP-2017-AUG-WI” Projects

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MISO Generator Interconnection Cycle “DPP-2017-AUG-WI” Projects



Purpose

- Update on MISO Generator Interconnection Cycle “DPP-2017-AUG-WI” Projects

Takeaways

- Capital Cost: \$134 million
- Fourteen (14) Interconnection Requests – all have signed GIAs (except J732 – in progress)
- Total: 2242 MW
- Seven (7) Interconnections at Six New Substations
- Seven (7) Interconnection at Existing Substations
- Sixteen (16) Network Projects
 - One (1) New 345-kV Substation
 - Fourteen(14) Existing Transformer or line upgrades
 - One (1) New 69-kV line (2.4 miles right-of-way)



Cost Assigned to Each Interconnection Request

No	MISO Queue #	Fuel	Name	Point of Interconnection	MW	Energy Resource Interconnection Service Network Upgrades (\$)			Network Resource Interconnection Service Network Upgrades (\$)	Interconnection Facilities (\$)		Total Cost of Network Upgrades (Exclude TOIF & Affected Systems) (\$)
						Steady - State Thermal & Voltage	Dynamic and EMT Stability	Short Circuit		TO Network Upgrades		
1	J732	CC	Nemadji Trail Energy	Arrowhead – Stone Lake 345 kV	562	0	0	100,000	3,898,500	17,565,722		21,564,222
2	J807	Wind	Quilt Block II	Falcon 138kV	41	91,379	0	67,969	439,916	912,072		1,511,335
3	J818	Solar	Badger State Solar	Jefferson 138 kV	149	0	0	100,000	4,696,165	1,847,766		6,643,931
4	J819	Wind	Badger State Solar	Darlington 138 kV	100	9,062,237	0	79,007	736,557	2,837,724		12,715,524
5	J821	Wind	Shullburg Wind Farm	Wien – Stratford 115 kV	100	0	0	200,000	0	7,606,420		7,806,420
6	J831	CC	Port Washington	Port Washington	40	0	0	0	0	0		0
7	J850	Solar	Bardford Solar	REC Bradford - West Darien 138-kV	250	0	0	205,001	9,434,820	7,430,619		17,070,441
8	J855	Wind	Red Barn Wind Farm	Lancaster - Eden 138-kV	101	0	0	0	0	8,005,945		8,005,945
9	J864	Solar	Richalnd County Solar	Lone Rock 69-kV	50	29,607	0	126,284	0	621,293		777,184
10	J870	Solar	Badger Hollow 1	Eden – Wyoming Valley 138 kV	200	640,300	7,776,887	130,782	0	5,371,900		13,919,869
11	J871	Solar	Badger Hollow 2	Eden – Wyoming Valley 138 kV	100	320,150	3,888,444	64,441	0	2,685,950		6,958,984
12	J878	Solar	Paris Solar	Paris 138 kV	200	0	0	247,728	22,948,588	1,996,777		25,193,093
13	J886	Solar	Two Creeks Solar	Kewaunee 138 kV	150	0	0	0	0	1,727,747		1,727,747
14	J947	Solar	Garnd County Solar	Potosi - Hillman 138-kV line	200	206,390	0	128,789	1,865,380	7,826,076		10,026,634
Total (\$)					2242	10,350,062	11,665,331	1,450,000	44,019,925	66,436,011		133,921,330

Blue Fonts: Interconnections at New Substations
 Costs are based on DPP Phase 3 System Impact Study Report

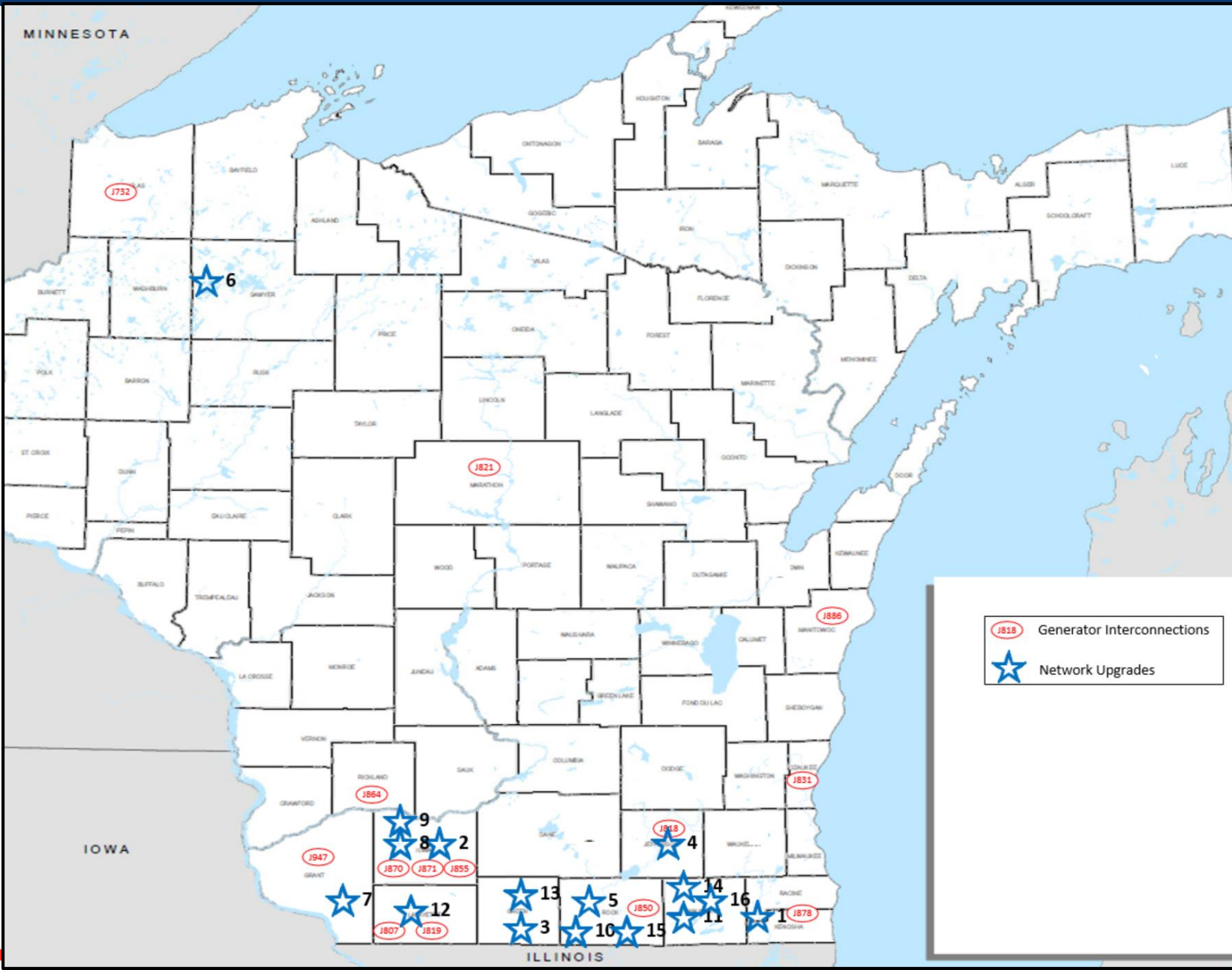
Project Costs: Interconnection Substation

No	Projects to Interconnect	Type	Cost	Assigned
1	J732 Interconnection Facility (Superior Substation 345 kV)	New ICF	17,565,722	
2	J870&J871 Interconnection Facility (Highland Substation 138 kV)	New ICF	8,057,850	
3	J855 Interconnection Facility (Ebenezer Substation 138 kV)	New ICF	8,005,945	
4	J947 Interconnection Facility (Tennyson Substation 138 kV)	New ICF	7,826,076	
5	J821 Interconnection Facility (Zenith Substation 115 kV)	New ICF	7,430,619	
6	J850 Interconnection Facility (North Creek Substation 138 kV)	New ICF	7,430,619	

No	Projects to Interconnect	Type	Cost	Assigned
	Interconnections at Existing Substations (Seven)	Existing ICF	9,943,379	Various
No	Projects to Accommodate Interconnection	Type	Cost	Assigned
	Short Circuit - Ground Grid upgrades	Existing	1,450,000	Various

Project Costs: Transmission Upgrades

No	Projects to Accommodate Output	Type	Cost	Assigned
1	Paris SS, new 345 kV bus and 345/138 kV transformer	NRIS	27,410,780	J850, J878
2	Eden - Lands End 69 kV, loop into J870/J871 POI	ERIS	11,665,331	J870, J871
3	South Monroe – Browntown 69 kV, rebuild	ERIS	8,834,840	J819
4	Concord – Cooney 138 kV, reconductor	NRIS	4,696,165	J818
5	Bass Creek – Town Line Road 138 kV, reconductor	NRIS	4,408,401	J850
6	Stone Lake SS, upgrade transformer (XCEL), upgrade	NRIS	3,898,500	J732
7	Hillman SS, upgrade transformer, uprate	NRIS	2,627,322	J807, J819, J947
8	Eden – J870J871 POI 138 kV, uprate	ERIS	567,093	J870, J871, J864
9	Spring Green – J870J871 POI 138 kV, uprate	ERIS	422,964	J870, J871
10	Rock River SS, terminal upgrade	NRIS	313,875	J807, J819, J947
11	North Lake Geneva Tap – Burlington 138 kV, uprate	NRIS	280,383	J850
12	Darlington – North Monroe 138 kV, uprate	ERIS	272,620	J807, J819, J947
13	North Monroe – Bass Creek 138 kV, uprate	ERIS	252,545	J807, J819, J947
14	Bristol – Elkhorn 138 kV, uprate	NRIS	243,377	J850
15	Rock River SS, bus switch upgrade	NRIS	95,737	J807, J819, J947
16	Elkhorn – North Lake Geneva 138 kV, uprate	NRIS	45,400	J807, J819, J850

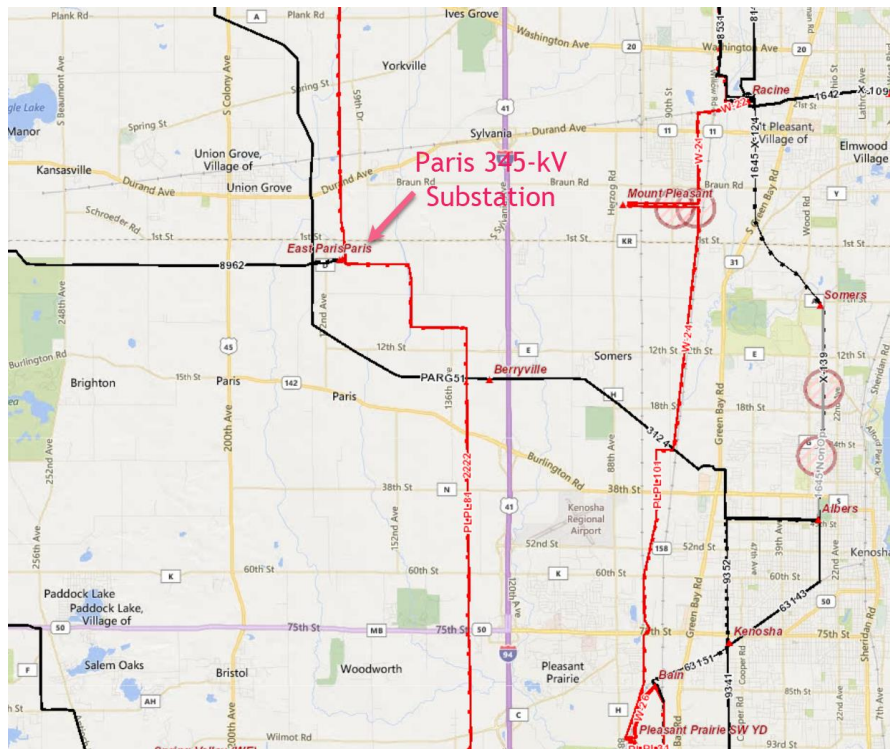


Eden to Land's End 69-kV, Loop into J870 & J871 POI



- Cost: \$11.7 million
- ISD: 12/31/2021
- Regulatory Filing: 3rd Quarter 2020
- Redesign J870/J871 Switching Station (Highland) to five position 138-kV ring bus expandable to six.
- Add one 100 MVA, 138/69-kV Transformer
- Loop Eden-Land's End 69 kV line Y-138 (~2.4 miles) on a double circuit
- Required for Interconnection of J870 and J871

New Paris 345 kV Substation Development



- Cost: \$27.5 million
- ISD: 12/23/2022
- Regulatory Filing: Early 2021
- Split 345-kV Line 2222 from Arcadian to Zion
- Build three position 345-kV ring bus expandable to breaker and half.
- Add one 500 MVA, 138/345-kV Transformer
- Add 138-kV breaker at Paris 138-kV
- Required for Interconnection of J878 and J850

In Progress: MISO Generation Interconnection Cycles

- DPP-2018-APR Cycle 1: Phase III will start in May, 2020
- DPP-2019-Cycle 1: Phase 1 will start in May, 2020
- DPP-2020-Cycle 1: Application deadline June 25, 2020

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