Appendix 22-1

Electric Magnetic Field (EMF) Study

Electric Magnetic Field (EMF) Study

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1.0 Introduction

On behalf of AES Clean Energy, TRC Companies performed an engineering assessment of the Electric and Magnetic Fields (EMF) associated with Riverside Solar Project (the Facility). This study was performed on the interconnection between the Facilities proposed collection substation and the tap to the Existing National Grid Thousand Islands – Coffeen St. #4 – Lyme Tap 115 kV Line. No EMF calculations were performed on the 34.5 kV collection system.

The proposed interconnection consists of 795 kcmil 26/7 Aluminum Conductor Steel Reinforced (ACSR) "Drake" conductors that will run approximately 330 ft from a takeoff structure in the collection substation, cross underneath the National Grid Thousand Islands – Coffeen St. #4 – Lyme Tap 115 kV Line and terminate at a three pole deadend structure. A short span of conductor will be used to tap onto the National Grid line at the crossing location.

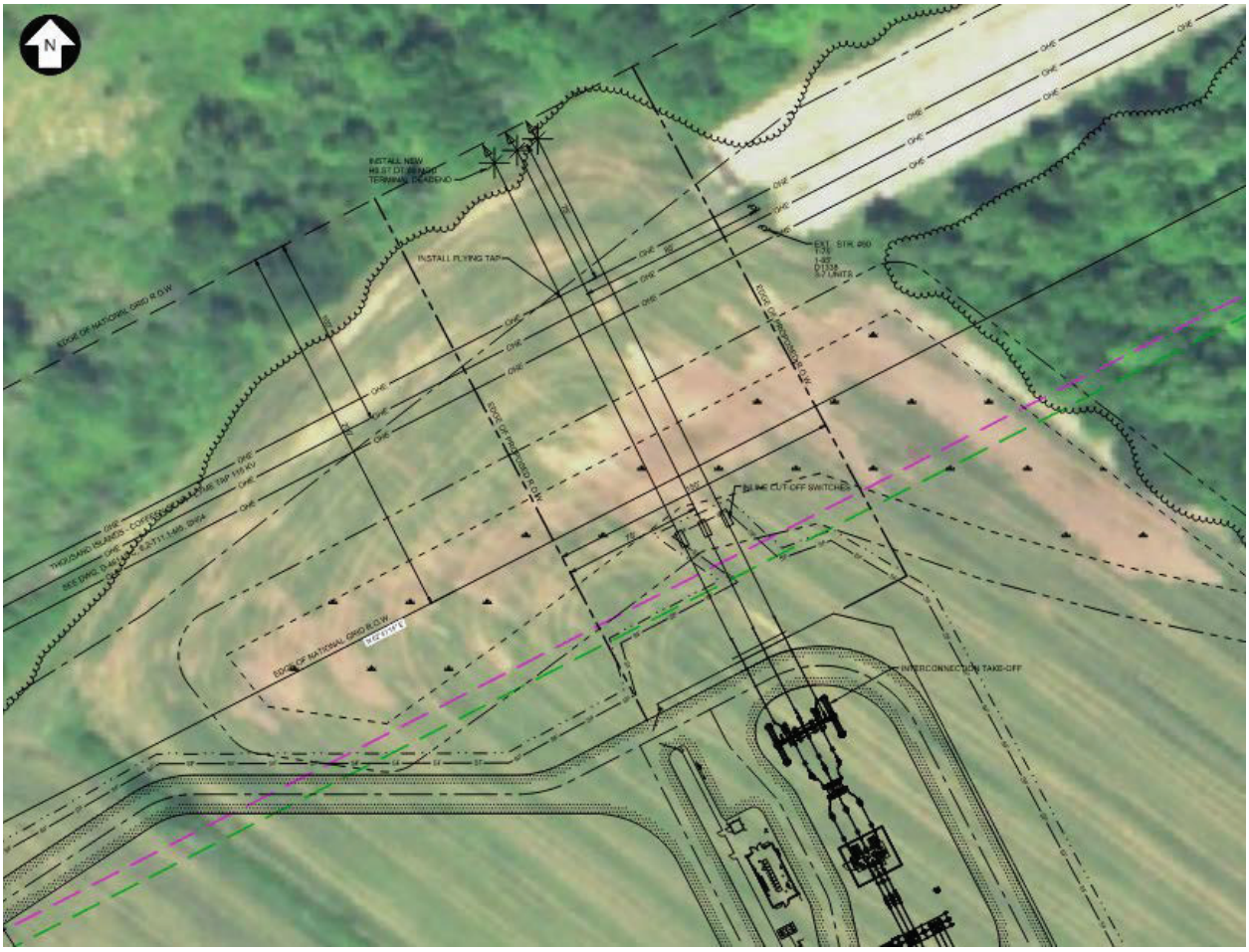


Figure 1: Interconnection Aerial Imagery (See Drawing HV-C.09.01)

This study evaluated the future EMF levels at 60 Hertz power line frequency produced by the proposed interconnection circuit. This study summarizes the future, or post-construction, calculated EMF generated from this location.

The pre-construction EMF field generated within this interconnection corridor varies with the perpendicular cross section of the National Grid Thousand Islands-Coffeen St 4, Lyme Sub Tap

115 kV Line. Line ratings were not provided by National Grid so approximate EMF levels were calculated using the assumed maximum rating, or Winter Normal Rating (WNR), of the existing conductors.

The post-construction EMF levels for the transmission connection were calculated using the geometry at the locations of the proposed HT.ST.DE.00 structure as shown in Figure 1 using the minimum conductor height of the span. The effects of the existing National Grid Thousand Islands-Coffeen St 4, Lyme Sub Tap 115 kV Line combined with the new interconnection were not modeled as the orientation of the two lines are approximately 90° apart and the typical EMF modeling programs require the lines to be parallel to model the shared impacts.

The solar panels associated with the Facility will generate direct current (DC) power. Multiple solar panels are interconnected and are connected via cables to inverters which convert the DC to alternating current (AC) power. There will be inverters centrally located throughout the Facility Site. Transformers associated with the inverters will step up the voltage to 34.5 kV. The output of the inverters and associated transformers will be collected via 34.5 kV underground collection feeders which will connect to the proposed collector substation. The proposed collector substation facility will step up the solar facility voltage from 34.5 kV to 115 kV.

2.0 Technical Approach

EMF levels were calculated using Bonneville Power Corona & Field Effects Ver. 3.1 Software. A computer simulation was developed to calculate the pre and post-construction EMF levels at the typical cross-section.

PVsyst software was utilized to model the amount of power generated from the Facility. The following table shows the power level generated and the associated current that will be transferred on the interconnection. Since this is a proposed single tap onto the Thousand Islands-Coffeen St 4, Lyme Sub Tap 115 kV line, the maximum current, aside from rapid transitory spikes, that can flow on the interconnection will be the peak power generated by the facility as identified in Table 1. The Summer Normal (SN), Winter Normal (WN) along with the Summer and Winter Short Term Emergency (STE) ratings of the conductor are irrelevant for this interconnection.

Table 1: Interconnection Currents:

	Energy Generated (MWh)	**Average Power (MW)**	**Current @115kV (Amps)**	**Current 0.9 PF (Amps)**
Annual	128263	14.64	73.60	81.78
Peak Level	N/A	100	502.04	557.82

2.1 Transmission Line Connections

The EMF calculations did not consider any energized sources other than the 3-phase transmission lines. In performing the EMF calculations, the following typical parameters were used:

- Existing 795 MCM 36/1 ACSR Coot and Proposed 795 kcmil 26/7 ACSR “Drake” conductor diameter

- Existing 200’ Right-of-Way (ROW) for the National Grid Thousand Islands-Coffeen St 4, Lyme Sub Tap 115 kV and Proposed 150’ ROW for the Transmission Interconnection (75’ from Centerline to Edge of ROW).
- Phase spacing of the conductors is as shown in Figure 2 and Figure 3 below and the conductor height above finished grade is based on the point of line crossing for the existing Lyme Tap and the midspan at maximum normal operating temperature for the proposed interconnection.
- Operating voltage of the lines with a 5% overvoltage (120.75 kV).
- Current Level based on the assumed maximum Winter Normal Rating (WNR) for the Lyme Tap of 1359 amps. The Interconnection was run at two current levels as identified in Table 1.

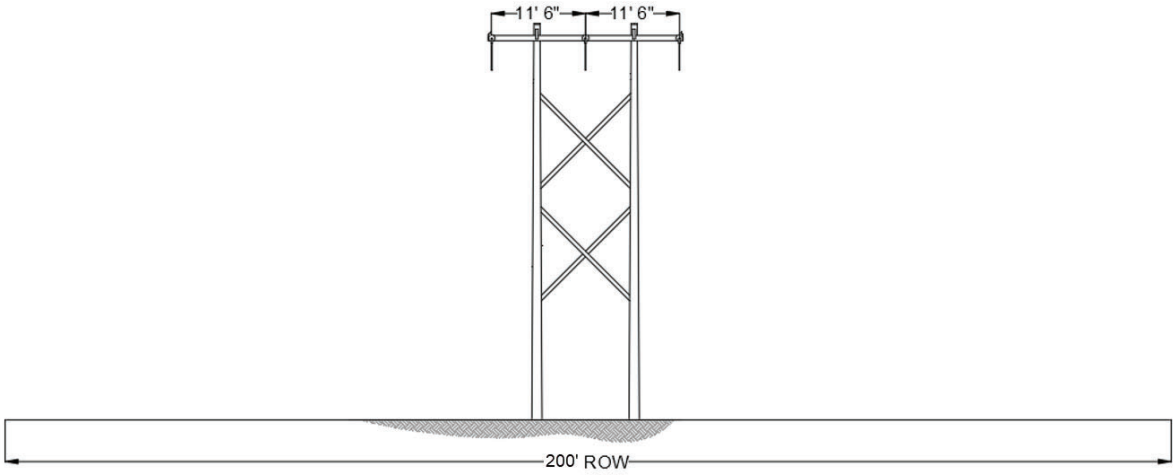


Figure 2: Existing Lyme Tap Cross Section

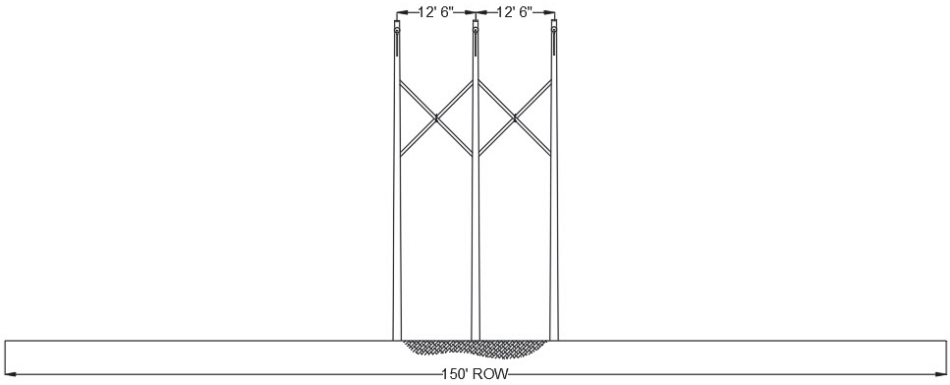


Figure 3: Transmission Interconnection Cross Section

3.0 Analytical Results

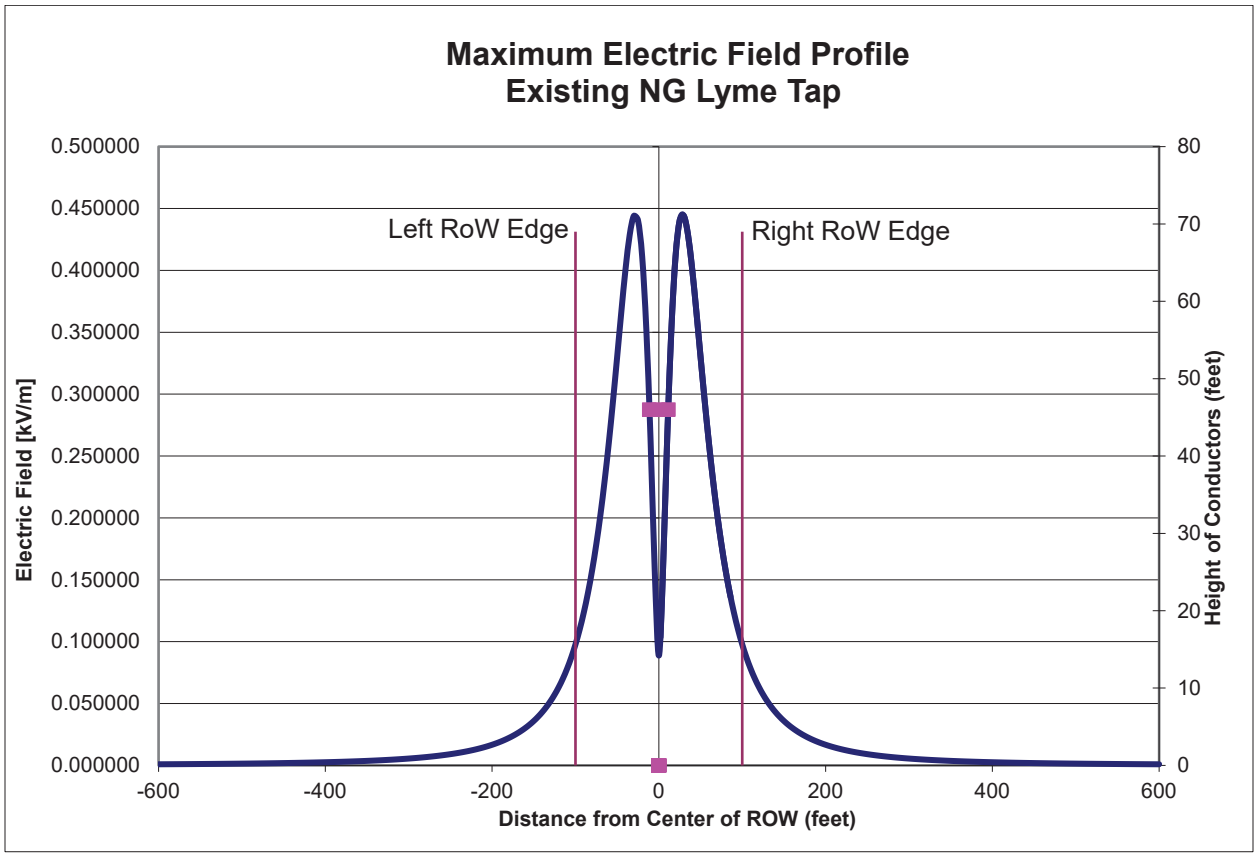
The following table and figures provide the results of the calculated EMF.

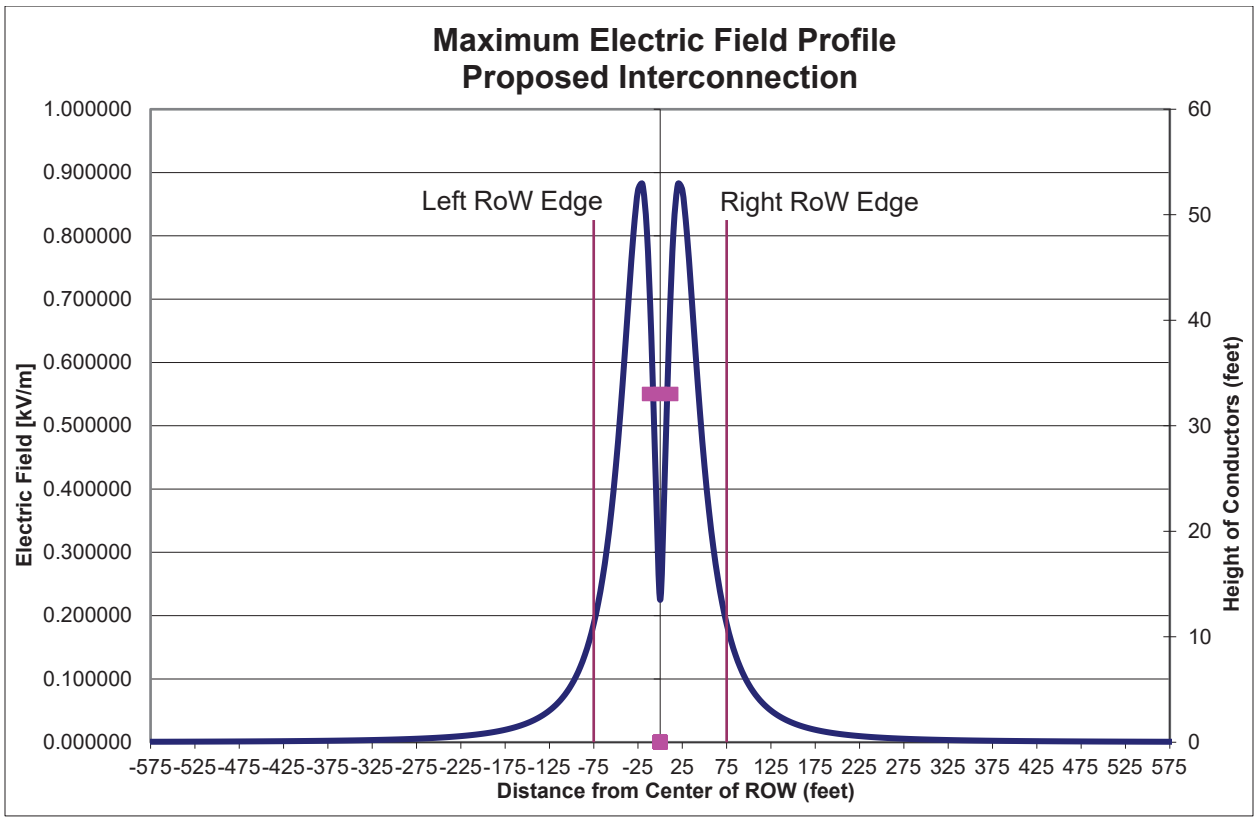
Table 2: EMF Results

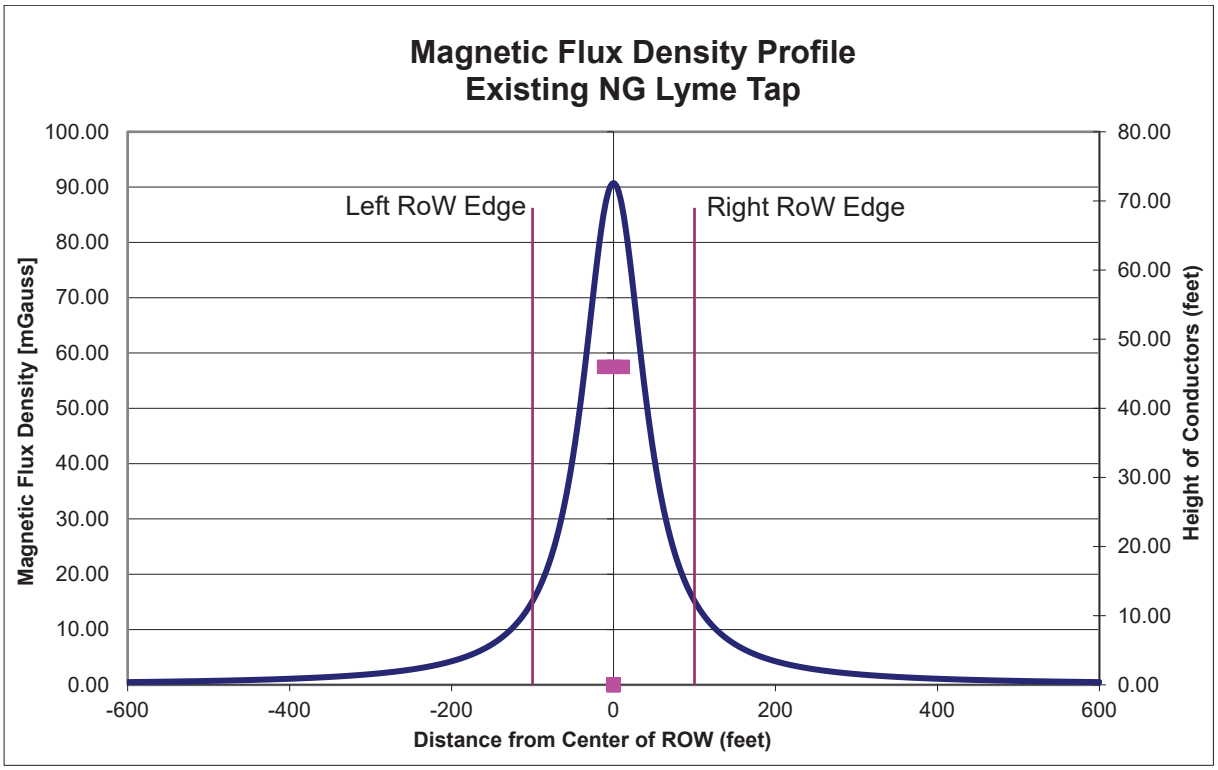
Configuration	Magnetic Field (mG)		Electric Field (kV/m)	
	ROW Edge	*Max.*	*ROW Edge*	*Max.*
Existing Lyme Tap (WNR)	15.16	90.7	0.10	0.44
Proposed Interconnection (Peak)	12.43	76.2	0.19	0.88
Proposed Interconnection (Avg)	1.83	11.2	0.19	0.88

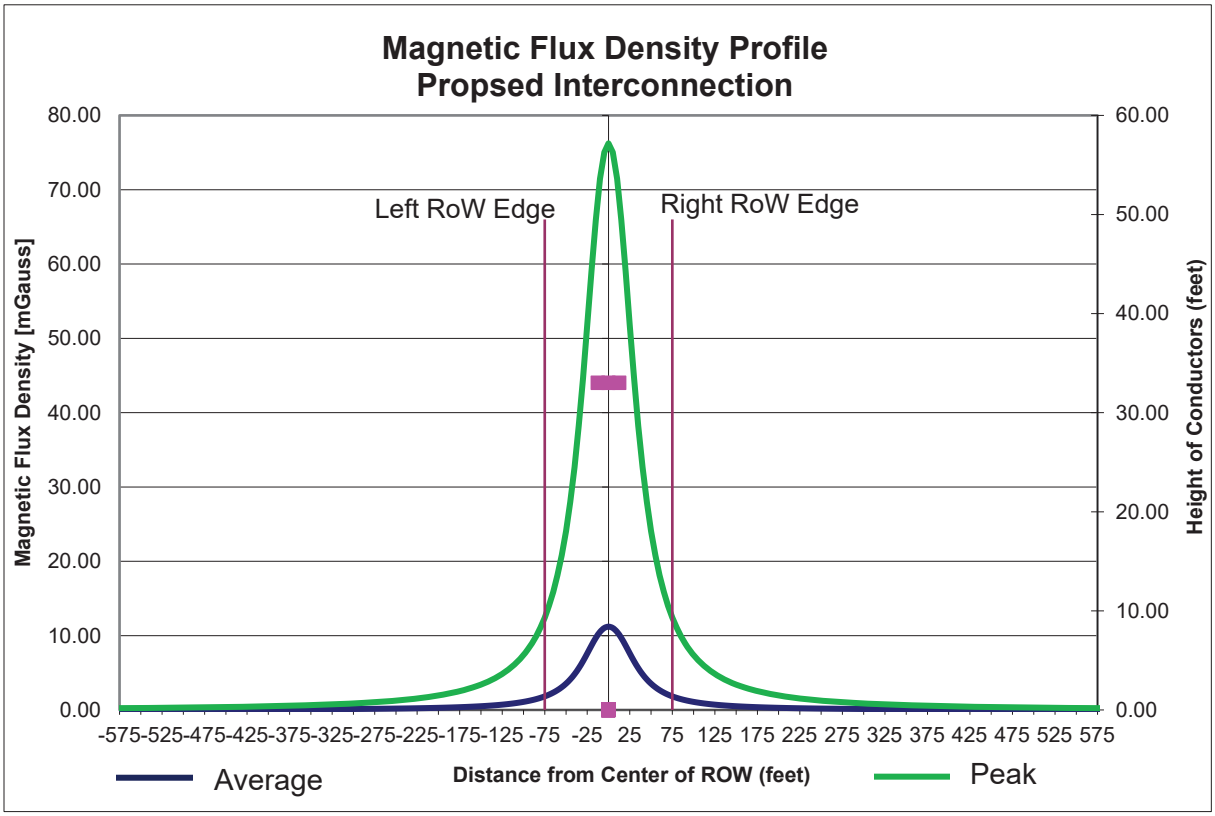
Figure 4: Distance to Nearest Residence

A review of the Facility Site has shown that the nearest residence to the transmission interconnection is located 1,338 feet away. As shown in the following figures and the tables in Appendix A, the electric and magnetic fields beyond 500 feet are asymptotically approaching zero.


Maximum Electric Field Profile
Existing NG Lyme Tap
Left RoW Edge
Right RoW Edge
Electric Field [kV/m]
Height of Conductors (feet)
Distance from Center of ROW (feet)
0.500000
0.450000
0.400000
0.350000
0.300000
0.250000
0.200000
0.150000
0.100000
0.050000
0.000000
80
70
60
50
40
30
20
10
0
-600
-400
-200
0
200
400
600


Maximum Electric Field Profile
Proposed Interconnection
Left RoW Edge
Right RoW Edge
Electric Field [kV/m]
Height of Conductors (feet)
Distance from Center of ROW (feet)
1.000000
0.900000
0.800000
0.700000
0.600000
0.500000
0.400000
0.300000
0.200000
0.100000
0.000000
60
50
40
30
20
10
0
-575 -525 -475 -425 -375 -325 -275 -225 -175 -125 -75 -25 25 75 125 175 225 275 325 375 425 475 525 575


Magnetic Flux Density Profile
Existing NG Lyme Tap
Left RoW Edge
Right RoW Edge
Magnetic Flux Density [mGauss]
Height of Conductors (feet)
Distance from Center of ROW (feet)
100.00
90.00
80.00
70.00
60.00
50.00
40.00
30.00
20.00
10.00
0.00
-600
-400
-200
0
200
400
600


Magnetic Flux Density Profile
Propsed Interconnection
Left RoW Edge
Right RoW Edge
Magnetic Flux Density [mGauss]
Height of Conductors (feet)
Distance from Center of ROW (feet)
Average
Peak
80.00
70.00
60.00
50.00
40.00
30.00
20.00
10.00
0.00
-575 -525 -475 -425 -375 -325 -275 -225 -175 -125 -75 -25 25 75 125 175 225 275 325 375 425 475 525 575

4.0 Conclusions

The maximum calculated electric field level for the existing Thousand Islands – Coffeen St. #4 – Lyme Tap 115 kV is 0.44 kV/m located 26 ft from the existing centerline. The maximum calculated electric field level at the edge of the existing ROW is 0.10 kV/m.

The maximum calculated electric field level on the proposed transmission interconnection is 0.88 kV/m located 20 ft from the centerline. The study reveals that the calculated electric field levels at the edge of the proposed ROW, located 75 feet from the centerline, is 0.19 kV/m and is less than the 1.6 kV/m maximum electric field level permitted at the edge of a transmission right-of-way in New York occupied by a major transmission line per the New York State Public Service Commission (NYS PSC) Interim Guideline.

The maximum calculated magnetic field level for the existing Thousand Islands – Coffeen St. #4 – Lyme Tap 115 kV is 90.7 mG located at the centerline. The maximum calculated magnetic field level at the edge of the existing ROW is 15.16 mG.

The maximum calculated magnetic field level on the transmission interconnection is 76.23 mG located at the centerline of the proposed ROW. The study reveals that the calculated magnetic field levels at the edge of the nearest proposed ROW, located 75 feet from the centerline, is 12.43 mG, which is below the 200 mG maximum field level permitted at the edge of a transmission ROW in New York occupied by a major transmission line as per the NYS PSC Interim Guideline.

In summary, this report calculates that the EMF levels associated with the interconnection between the Facilities collection substation and the existing Thousand Islands – Coffeen St. #4 – Lyme Tap 115 kV line are within established guidelines. The nearest residence to the interconnection is 1,338 feet away and the EMF levels from the interconnection will be negligible at this distance. Additionally, the solar panels installed as part of the Facility will be a minimum of 50 feet from the Facility boundaries. EMF from individual panels represent outputs consistent with household EMF levels. The setback associated with the Facility design contribute to minimize static EMF from these DC sources at the Facility boundaries.

5.0 Appendix A: Software Output Table & Input Data

Distance from ROW center (ft)	Existing Lyme Tap		Proposed Interconnection		
	Electric Field (kV/m)	WNR Magnetic Field (mG)	Electric Field (kV/m)	Average Magnetic Field (mG)	Peak Magnetic Field (mG)
-625	N/A	N/A	0.00063	0.02976	0.20252
-620	N/A	N/A	0.00064	0.03024	0.20579
-615	N/A	N/A	0.00066	0.03073	0.20915
-610	N/A	N/A	0.00067	0.03124	0.21258
-605	N/A	N/A	0.00068	0.03176	0.21611
-600	0.00091	0.49098	0.00070	0.03229	0.21972
-595	0.00093	0.49923	0.00071	0.03283	0.22342
-590	0.00095	0.50769	0.00073	0.03339	0.22721
-585	0.00097	0.51636	0.00074	0.03396	0.23110
-580	0.00099	0.52526	0.00076	0.03455	0.23510
-575	0.00101	0.53439	0.00078	0.03515	0.23919
-570	0.00103	0.54375	0.00079	0.03577	0.24340
-565	0.00106	0.55337	0.00081	0.03640	0.24772
-560	0.00108	0.56324	0.00083	0.03705	0.25215
-555	0.00110	0.57338	0.00085	0.03772	0.25670
-550	0.00113	0.58380	0.00087	0.03841	0.26138
-545	0.00116	0.59450	0.00089	0.03912	0.26619
-540	0.00118	0.60549	0.00091	0.03984	0.27113
-535	0.00121	0.61680	0.00093	0.04059	0.27621
-530	0.00124	0.62842	0.00095	0.04136	0.28143
-525	0.00127	0.64038	0.00098	0.04215	0.28680
-520	0.00130	0.65267	0.00100	0.04296	0.29233
-515	0.00133	0.66533	0.00103	0.04380	0.29802
-510	0.00137	0.67836	0.00105	0.04466	0.30388
-505	0.00140	0.69177	0.00108	0.04554	0.30991
-500	0.00144	0.70558	0.00111	0.04645	0.31612
-495	0.00147	0.71981	0.00114	0.04740	0.32252
-490	0.00151	0.73447	0.00117	0.04836	0.32912
-485	0.00155	0.74958	0.00120	0.04936	0.33592
-480	0.00160	0.76517	0.00123	0.05039	0.34293
-475	0.00164	0.78124	0.00126	0.05146	0.35016
-470	0.00168	0.79783	0.00130	0.05255	0.35763
-465	0.00173	0.81494	0.00134	0.05369	0.36534
-460	0.00178	0.83262	0.00138	0.05486	0.37330
-455	0.00183	0.85087	0.00142	0.05607	0.38152
-450	0.00188	0.86973	0.00146	0.05731	0.39001
-445	0.00194	0.88922	0.00150	0.05860	0.39880
-440	0.00200	0.90937	0.00155	0.05994	0.40788
-435	0.00206	0.93021	0.00159	0.06132	0.41727
-430	0.00212	0.95177	0.00164	0.06275	0.42700
-425	0.00219	0.97409	0.00169	0.06423	0.43706
-420	0.00226	0.99720	0.00175	0.06576	0.44749
-415	0.00233	1.02114	0.00180	0.06735	0.45829
-410	0.00240	1.04595	0.00186	0.06899	0.46949
-405	0.00248	1.07167	0.00193	0.07070	0.48111
-400	0.00256	1.09835	0.00199	0.07247	0.49316
-395	0.00265	1.12604	0.00206	0.07431	0.50566
-390	0.00274	1.15478	0.00213	0.07622	0.51865
-385	0.00284	1.18463	0.00221	0.07820	0.53215
-380	0.00294	1.21565	0.00228	0.08026	0.54618
-375	0.00304	1.24790	0.00237	0.08241	0.56076
-370	0.00315	1.28144	0.00245	0.08464	0.57594

Distance from ROW center (ft)	Existing Lyme Tap		Proposed Interconnection		
	Electric Field (kV/m)	WNR Magnetic Field (mG)	Electric Field (kV/m)	Average Magnetic Field (mG)	Peak Magnetic Field (mG)
-365	0.00327	1.31635	0.00255	0.08696	0.59175
-360	0.00339	1.35270	0.00264	0.08938	0.60821
-355	0.00352	1.39057	0.00275	0.09190	0.62537
-350	0.00366	1.43004	0.00285	0.09453	0.64326
-345	0.00380	1.47121	0.00297	0.09727	0.66193
-340	0.00395	1.51417	0.00309	0.10014	0.68142
-335	0.00411	1.55904	0.00322	0.10313	0.70179
-330	0.00428	1.60592	0.00335	0.10626	0.72307
-325	0.00446	1.65493	0.00349	0.10953	0.74535
-320	0.00465	1.70621	0.00364	0.11296	0.76866
-315	0.00485	1.75989	0.00381	0.11655	0.79308
-310	0.00507	1.81614	0.00398	0.12031	0.81868
-305	0.00529	1.87511	0.00416	0.12425	0.84554
-300	0.00554	1.93697	0.00435	0.12840	0.87374
-295	0.00580	2.00194	0.00456	0.13275	0.90337
-290	0.00607	2.07020	0.00478	0.13733	0.93452
-285	0.00636	2.14199	0.00502	0.14215	0.96731
-280	0.00668	2.21755	0.00527	0.14723	1.00186
-275	0.00701	2.29714	0.00554	0.15258	1.03828
-270	0.00737	2.38107	0.00583	0.15823	1.07671
-265	0.00776	2.46965	0.00614	0.16419	1.11732
-260	0.00817	2.56321	0.00648	0.17050	1.16025
-255	0.00861	2.66215	0.00684	0.17718	1.20570
-250	0.00909	2.76687	0.00723	0.18426	1.25387
-245	0.00960	2.87784	0.00765	0.19177	1.30496
-240	0.01016	2.99555	0.00810	0.19974	1.35923
-235	0.01076	3.12055	0.00860	0.20822	1.41694
-230	0.01141	3.25346	0.00913	0.21725	1.47839
-225	0.01211	3.39494	0.00971	0.22688	1.54391
-220	0.01288	3.54574	0.01034	0.23716	1.61385
-215	0.01371	3.70668	0.01103	0.24815	1.68863
-210	0.01461	3.87869	0.01179	0.25992	1.76871
-205	0.01560	4.06278	0.01261	0.27254	1.85457
-200	0.01668	4.26010	0.01352	0.28609	1.94681
-195	0.01786	4.47191	0.01452	0.30068	2.04606
-190	0.01916	4.69966	0.01562	0.31640	2.15304
-185	0.02058	4.94495	0.01683	0.33337	2.26857
-180	0.02215	5.20960	0.01818	0.35174	2.39358
-175	0.02389	5.49564	0.01967	0.37166	2.52912
-170	0.02581	5.80540	0.02134	0.39331	2.67641
-165	0.02794	6.14151	0.02320	0.41688	2.83682
-160	0.03031	6.50697	0.02528	0.44261	3.01194
-155	0.03296	6.90520	0.02763	0.47078	3.20361
-150	0.03591	7.34011	0.03027	0.50169	3.41396
-145	0.03922	7.81620	0.03326	0.53571	3.64545
-140	0.04294	8.33867	0.03665	0.57326	3.90097
-135	0.04714	8.91348	0.04052	0.61484	4.18392
-130	0.05188	9.54759	0.04495	0.66104	4.49829
-125	0.05724	10.24904	0.05004	0.71255	4.84883
-120	0.06334	11.02724	0.05592	0.77021	5.24117
-115	0.07029	11.89315	0.06274	0.83500	5.68207
-110	0.07823	12.85963	0.07069	0.90812	6.17968

Distance from ROW center (ft)	Existing Lyme Tap		Proposed Interconnection		
	Electric Field (kV/m)	WNR Magnetic Field (mG)	Electric Field (kV/m)	Average Magnetic Field (mG)	Peak Magnetic Field (mG)
-105	0.08733	13.94177	0.08000	0.99103	6.74384
-100	0.09776	15.15727	0.09097	1.08548	7.38657
-95	0.10976	16.52700	0.10395	1.19364	8.12259
-90	0.12358	18.07542	0.11939	1.31818	8.97003
-85	0.13949	19.83124	0.13788	1.46239	9.95138
-80	0.15781	21.82795	0.16011	1.63040	11.09467
-75	0.17885	24.10425	0.18699	1.82736	12.43494
-70	0.20291	26.70431	0.21959	2.05972	14.01616
-65	0.23019	29.67731	0.25925	2.33560	15.89345
-60	0.26076	33.07607	0.30750	2.66508	18.13551
-55	0.29435	36.95373	0.36599	3.06059	20.82691
-50	0.33016	41.35752	0.43621	3.53700	24.06884
-45	0.36656	46.31818	0.51889	4.11115	27.97586
-40	0.40077	51.83359	0.61275	4.80001	32.66351
-35	0.42853	57.84631	0.71253	5.61628	38.21811
-30	0.44403	64.21719	0.80608	6.55973	44.63816
-25	0.44041	70.70249	0.87211	7.60404	51.74459
-20	0.41109	76.94703	0.88158	8.68345	59.08979
-15	0.35193	82.50794	0.80729	9.69148	65.94931
-10	0.26408	86.91409	0.64142	10.50507	71.48575
-5	0.15866	89.74854	0.41369	11.02576	75.02896
0	0.08873	90.72685	0.22486	11.20345	76.23814
5	0.15866	89.74854	0.41369	11.02576	75.02896
10	0.26408	86.91409	0.64142	10.50507	71.48575
15	0.35193	82.50794	0.80729	9.69148	65.94931
20	0.41109	76.94703	0.88158	8.68345	59.08979
25	0.44041	70.70249	0.87211	7.60404	51.74459
30	0.44403	64.21719	0.80608	6.55973	44.63816
35	0.42853	57.84631	0.71253	5.61628	38.21811
40	0.40077	51.83359	0.61275	4.80001	32.66351
45	0.36656	46.31818	0.51889	4.11115	27.97586
50	0.33016	41.35752	0.43621	3.53700	24.06884
55	0.29435	36.95373	0.36599	3.06059	20.82691
60	0.26076	33.07607	0.30750	2.66508	18.13551
65	0.23019	29.67731	0.25925	2.33560	15.89345
70	0.20291	26.70431	0.21959	2.05972	14.01616
75	0.17885	24.10425	0.18699	1.82736	12.43494
80	0.15781	21.82795	0.16011	1.63040	11.09467
85	0.13949	19.83124	0.13788	1.46239	9.95138
90	0.12358	18.07542	0.11939	1.31818	8.97003
95	0.10976	16.52700	0.10395	1.19364	8.12259
100	0.09776	15.15727	0.09097	1.08548	7.38657
105	0.08733	13.94177	0.08000	0.99103	6.74384
110	0.07823	12.85963	0.07069	0.90812	6.17968
115	0.07029	11.89315	0.06274	0.83500	5.68207
120	0.06334	11.02724	0.05592	0.77021	5.24117
125	0.05724	10.24904	0.05004	0.71255	4.84883
130	0.05188	9.54759	0.04495	0.66104	4.49829
135	0.04714	8.91348	0.04052	0.61484	4.18392
140	0.04294	8.33867	0.03665	0.57326	3.90097
145	0.03922	7.81620	0.03326	0.53571	3.64545
150	0.03591	7.34011	0.03027	0.50169	3.41396

Distance from ROW center (ft)	Existing Lyme Tap		Proposed Interconnection		
	Electric Field (kV/m)	WNR Magnetic Field (mG)	Electric Field (kV/m)	Average Magnetic Field (mG)	Peak Magnetic Field (mG)
155	0.03296	6.90520	0.02763	0.47078	3.20361
160	0.03031	6.50697	0.02528	0.44261	3.01194
165	0.02794	6.14151	0.02320	0.41688	2.83682
170	0.02581	5.80540	0.02134	0.39331	2.67641
175	0.02389	5.49564	0.01967	0.37166	2.52912
180	0.02215	5.20960	0.01818	0.35174	2.39358
185	0.02058	4.94495	0.01683	0.33337	2.26857
190	0.01916	4.69966	0.01562	0.31640	2.15304
195	0.01786	4.47191	0.01452	0.30068	2.04606
200	0.01668	4.26010	0.01352	0.28609	1.94681
205	0.01560	4.06278	0.01261	0.27254	1.85457
210	0.01461	3.87869	0.01179	0.25992	1.76871
215	0.01371	3.70668	0.01103	0.24815	1.68863
220	0.01288	3.54574	0.01034	0.23716	1.61385
225	0.01211	3.39494	0.00971	0.22688	1.54391
230	0.01141	3.25346	0.00913	0.21725	1.47839
235	0.01076	3.12055	0.00860	0.20822	1.41694
240	0.01016	2.99555	0.00810	0.19974	1.35923
245	0.00960	2.87784	0.00765	0.19177	1.30496
250	0.00909	2.76687	0.00723	0.18426	1.25387
255	0.00861	2.66215	0.00684	0.17718	1.20570
260	0.00817	2.56321	0.00648	0.17050	1.16025
265	0.00776	2.46965	0.00614	0.16419	1.11732
270	0.00737	2.38107	0.00583	0.15823	1.07671
275	0.00701	2.29714	0.00554	0.15258	1.03828
280	0.00668	2.21755	0.00527	0.14723	1.00186
285	0.00636	2.14199	0.00502	0.14215	0.96731
290	0.00607	2.07020	0.00478	0.13733	0.93452
295	0.00580	2.00194	0.00456	0.13275	0.90337
300	0.00554	1.93697	0.00435	0.12840	0.87374
305	0.00529	1.87511	0.00416	0.12425	0.84554
310	0.00507	1.81614	0.00398	0.12031	0.81868
315	0.00485	1.75989	0.00381	0.11655	0.79308
320	0.00465	1.70621	0.00364	0.11296	0.76866
325	0.00446	1.65493	0.00349	0.10953	0.74535
330	0.00428	1.60592	0.00335	0.10626	0.72307
335	0.00411	1.55904	0.00322	0.10313	0.70179
340	0.00395	1.51417	0.00309	0.10014	0.68142
345	0.00380	1.47121	0.00297	0.09727	0.66193
350	0.00366	1.43004	0.00285	0.09453	0.64326
355	0.00352	1.39057	0.00275	0.09190	0.62537
360	0.00339	1.35270	0.00264	0.08938	0.60821
365	0.00327	1.31635	0.00255	0.08696	0.59175
370	0.00315	1.28144	0.00245	0.08464	0.57594
375	0.00304	1.24790	0.00237	0.08241	0.56076
380	0.00294	1.21565	0.00228	0.08026	0.54618
385	0.00284	1.18463	0.00221	0.07820	0.53215
390	0.00274	1.15478	0.00213	0.07622	0.51865
395	0.00265	1.12604	0.00206	0.07431	0.50566
400	0.00256	1.09835	0.00199	0.07247	0.49316
405	0.00248	1.07167	0.00193	0.07070	0.48111
410	0.00240	1.04595	0.00186	0.06899	0.46949

Distance from ROW center (ft)	Existing Lyme Tap		Proposed Interconnection		
	Electric Field (kV/m)	WNR Magnetic Field (mG)	Electric Field (kV/m)	Average Magnetic Field (mG)	Peak Magnetic Field (mG)
415	0.00233	1.02114	0.00180	0.06735	0.45829
420	0.00226	0.99720	0.00175	0.06576	0.44749
425	0.00219	0.97409	0.00169	0.06423	0.43706
430	0.00212	0.95177	0.00164	0.06275	0.42700
435	0.00206	0.93021	0.00159	0.06132	0.41727
440	0.00200	0.90937	0.00155	0.05994	0.40788
445	0.00194	0.88922	0.00150	0.05860	0.39880
450	0.00188	0.86973	0.00146	0.05731	0.39001
455	0.00183	0.85087	0.00142	0.05607	0.38152
460	0.00178	0.83262	0.00138	0.05486	0.37330
465	0.00173	0.81494	0.00134	0.05369	0.36534
470	0.00168	0.79783	0.00130	0.05255	0.35763
475	0.00164	0.78124	0.00126	0.05146	0.35016
480	0.00160	0.76517	0.00123	0.05039	0.34293
485	0.00155	0.74958	0.00120	0.04936	0.33592
490	0.00151	0.73447	0.00117	0.04836	0.32912
495	0.00147	0.71981	0.00114	0.04740	0.32252
500	0.00144	0.70558	0.00111	0.04645	0.31612
505	0.00140	0.69177	0.00108	0.04554	0.30991
510	0.00137	0.67836	0.00105	0.04466	0.30388
515	0.00133	0.66533	0.00103	0.04380	0.29802
520	0.00130	0.65267	0.00100	0.04296	0.29233
525	0.00127	0.64038	0.00098	0.04215	0.28680
530	0.00124	0.62842	0.00095	0.04136	0.28143
535	0.00121	0.61680	0.00093	0.04059	0.27621
540	0.00118	0.60549	0.00091	0.03984	0.27113
545	0.00116	0.59450	0.00089	0.03912	0.26619
550	0.00113	0.58380	0.00087	0.03841	0.26138
555	0.00110	0.57338	0.00085	0.03772	0.25670
560	0.00108	0.56324	0.00083	0.03705	0.25215
565	0.00106	0.55337	0.00081	0.03640	0.24772
570	0.00103	0.54375	0.00079	0.03577	0.24340
575	0.00101	0.53439	0.00078	0.03515	0.23919
580	0.00099	0.52526	0.00076	0.03455	0.23510
585	0.00097	0.51636	0.00074	0.03396	0.23110
590	0.00095	0.50769	0.00073	0.03339	0.22721
595	0.00093	0.49923	0.00071	0.03283	0.22342
600	0.00091	0.49098	0.00070	0.03229	0.21972
605	N/A	N/A	0.00068	0.03176	0.21611
610	N/A	N/A	0.00067	0.03124	0.21258
615	N/A	N/A	0.00066	0.03073	0.20915
620	N/A	N/A	0.00064	0.03024	0.20579
625	N/A	N/A	0.00063	0.02976	0.20252

EMF and Corona Effects Analysis

Calculation Identifier: Thousand Islands ▌ Coffeen St. #4 ▌ Lyme Tap 115 kV

Bundle	X-feet	Y-feet	Number of Conductors	Conductor Diameter [inches]	Conductor Spacing [inches]	L-L Voltage (rated kV)	Amperes	Phase [degrees]	Line Name	Right of Way Data	
1	-11.50	46.00	1	1.1080	0.000	115	1359.00	120	Lyme Tap	Offset from X=0 to Left RoW edge	-100.00
2	0.00	46.00	1	1.1080	0.000	115	1359.00	240		Offset from X=0 to RoW center	0.00
3	11.50	46.00	1	1.1080	0.000	115	1359.00	0			
NPH=	3.00										

Altitude =	**0.0**	[feet]	for AN and RI)
Frequency (RI) =	**1.00**	[Mhz]	(for RI)
Ground Conductivity =	**4.00**	[millimho/m]	(for RI)
Frequency (TV) =	**1.00**	[Mhz]	(for TVI)

EMF and Corona Effects Analysis

Calculation Identifier: Interconnection Tap

Bundle	X-feet	Y-feet	Number of Conductors	Conductor Diameter [inches]	Conductor Spacing [inches]	L-L Voltage (rated kV)	Amperes	Phase [degrees]	Line Name	Right of Way Data	
1	-12.50	33.00	1	1.1080	0.000	115	82.00	120	Interconnection	Offset from X=0 to Left RoW edge	-75.00
2	0.00	33.00	1	1.1080	0.000	115	82.00	240		Offset from X=0 to RoW center	0.00
3	12.50	33.00	1	1.1080	0.000	115	82.00	0			
NPH=	3.00										

Altitude =	**900.0**	[feet]	for AN and RI)
Frequency (RI) =	**1.00**	[Mhz]	(for RI)
Ground Conductivity =	**10.00**	[millimho/m]	(for RI)
Frequency (TV) =	**75.00**	[Mhz]	(for TVI)

EMF and Corona Effects Analysis

Calculation Identifier: Interconnection Tap

Bundle	X-feet	Y-feet	Number of Conductors	Conductor Diameter [inches]	Conductor Spacing [inches]	L-L Voltage (rated kV)	Amperes	Phase [degrees]	Line Name	Right of Way Data	
1	-12.50	33.00	1	1.1080	0.000	115	558.00	120	Interconnection	Offset from X=0 to Left RoW edge	-75.00
2	0.00	33.00	1	1.1080	0.000	115	558.00	240		Offset from X=0 to RoW center	0.00
3	12.50	33.00	1	1.1080	0.000	115	558.00	0			
NPH=	3.00										

Altitude =	**900.0**	[feet]	for AN and RI)
Frequency (RI) =	**1.00**	[Mhz]	(for RI)
Ground Conductivity =	**10.00**	[millimho/m]	(for RI)
Frequency (TV) =	**75.00**	[Mhz]	(for TVI)