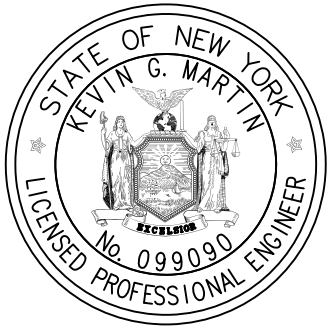




Electric Magnetic Field (EMF) Study

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1.0 Introduction

On behalf of AES Clean Energy, TRC Companies has performed an engineering assessment of the Electric and Magnetic Fields (EMF) associated with Brookside Solar Project (the Facility). The proposed configuration will consist of the Facilities collection substation directly adjacent to a three breaker ring bus substation to be owned by NYSEG. This NYSEG station will have a loop in and loop out connection to the existing NYSEG Line 911 Willis Rd to Chateaugay 115kV transmission line. (See Figure 1)

The collection station is connected to the proposed NYSEG station by a short section of strain bus of less than 100ft in length. This connection is fully contained within the collection and NYSEG substation fences, so no EMF studies were performed on this connection. This study was performed on the loop in and loop out connections between the proposed NYSEG substation and the existing Line 911. No EMF calculations were performed on the 34.5 kV collection system.

The proposed interconnection consists of two runs of 336.4 kcmil 30/7 Aluminum Conductor Steel Reinforced (ACSR) “Oriole” conductors that will run approximately 173 ft and 210 ft from the takeoff structures in the NYSEG substation respectively to structures 103 and 104 that will be replaced as part of this project.

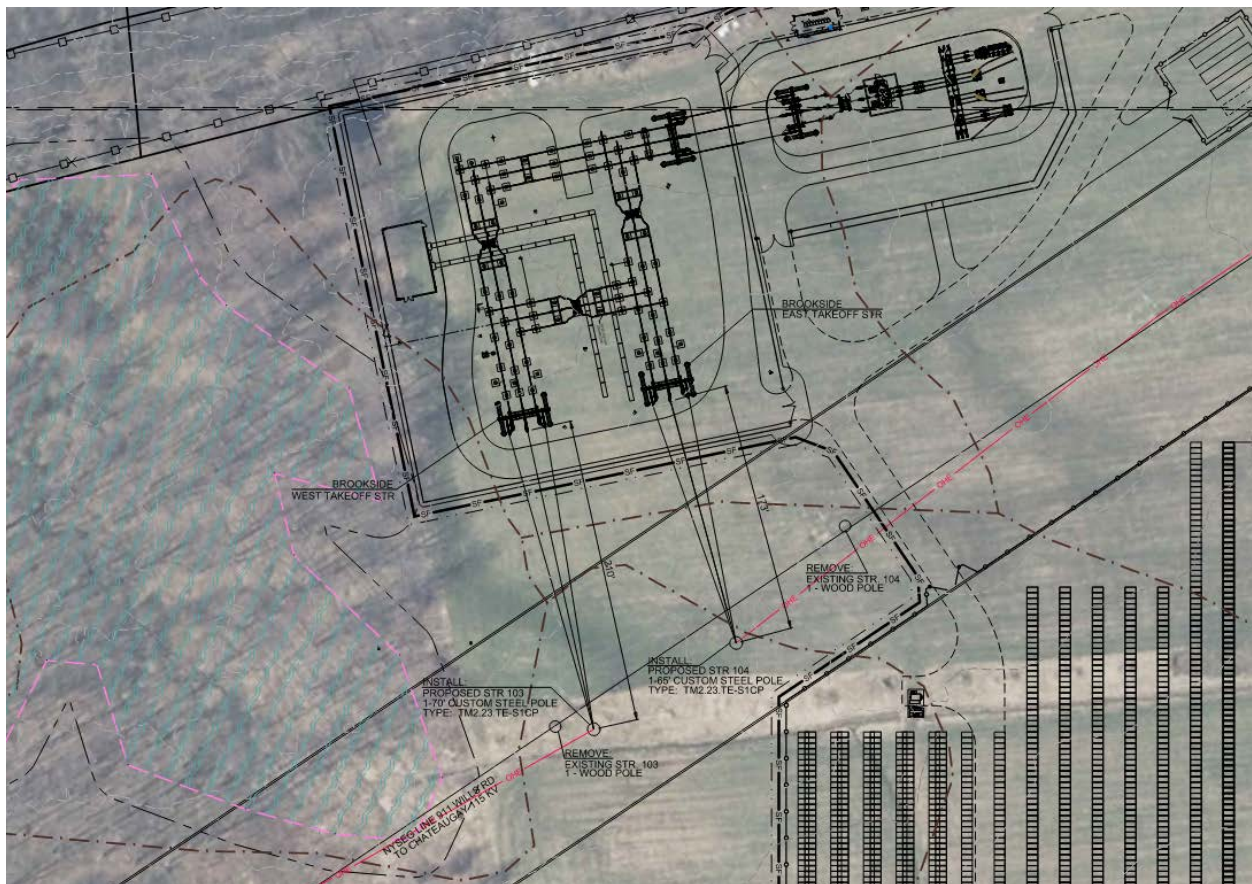


Figure 1: Interconnection Aerial Imagery

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

The pre-construction EMF field generated along this interconnection varies as there is existing EMF generated from the NYSEG Line 911. EMF levels were calculated using the ratings provided by NYSEG in Table 1 for the existing line.

The post-construction EMF levels for the transmission connection were calculated using the geometry at the locations of the proposed replacement structures 103 and 104 as shown in Figure 1 above. The effects of the existing NYSEG Line 911 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.

NYSEG provided the existing line ratings for the line 911 Willis-Chateaugay Tap (115 kV). These ratings will be the controlling factors for the proposed loop in loop out as well. The existing average load of the line was not provided by NYSEG. The power output of the solar Facility will be transmitted on the line, but it will not be allowed to operate at current levels above these ratings, therefore these ratings will be applicable for both the existing and proposed line configurations.

Table 1: Existing and Proposed Line Ratings

	Summer Normal	Long Term Emergency Summer	Short Term Emergency Summer	Winter Normal
Current Rating (Amps)	680	800	880	870

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 and proposed 336.4 kcmil 30/7 ACSR Oriole conductor diameter

- Existing 150' Right-of-Way (ROW) for the existing NYSEG Line 911 and Proposed 241' ROW for the Transmission loop In loop out connection (75' from Centerline of structure 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 minimum height of the span at maximum normal operating temperature.
- Operating voltage of the lines with a 5% overvoltage (120.75 kV).
- Current Levels as shown in Table 1.
- Assumed that the existing Line 911 centerline is centered in the NYSEG 150' ROW

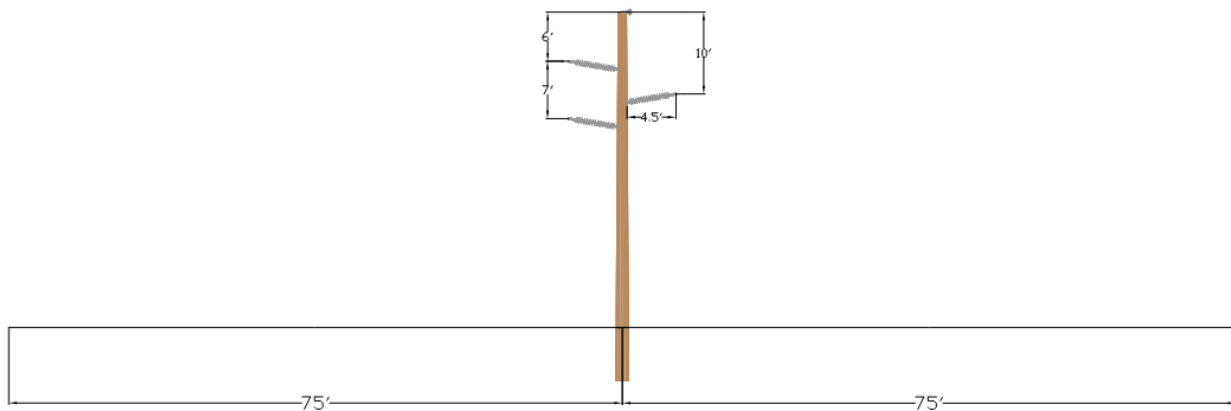


Figure 2: Existing Line 911 Cross Section

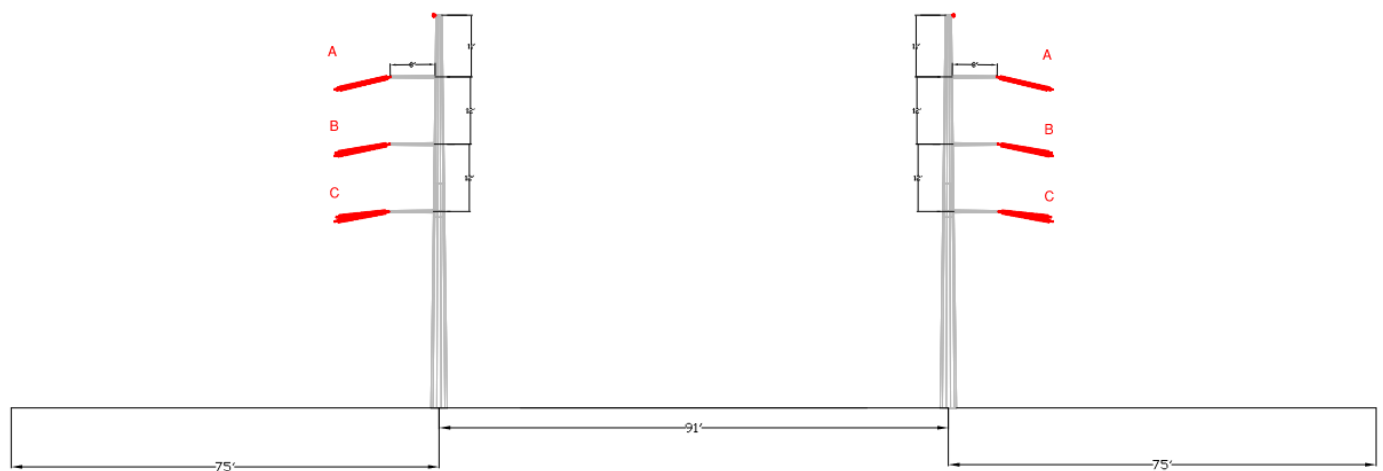


Figure 3: Transmission Loop in Loop out Cross Section

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)	
	Max ROW Edge	Max.	Max ROW Edge	Max.
Existing NYSEG Line 911 (SN)	6.78	49.31	0.096	0.6
Existing NYSEG Line 911 (LTE-S)	7.98	58.02		
Existing NYSEG Line 911 (STE-S)	8.77	63.82		
Existing NYSEG Line 911 (WN)	8.67	63.09		
Proposed Loop In Loop Out Connection (SN)	12.32	75.04	0.030	1.1
Proposed Loop In Loop Out Connection (LTE-S)	14.49	88.28		
Proposed Loop In Loop Out Connection (STE-S)	15.94	97.11		
Proposed Loop In Loop Out Connection (WN)	15.76	96.01		

A review of the Facility Site has shown that the nearest residence to the transmission interconnection is located 947 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.

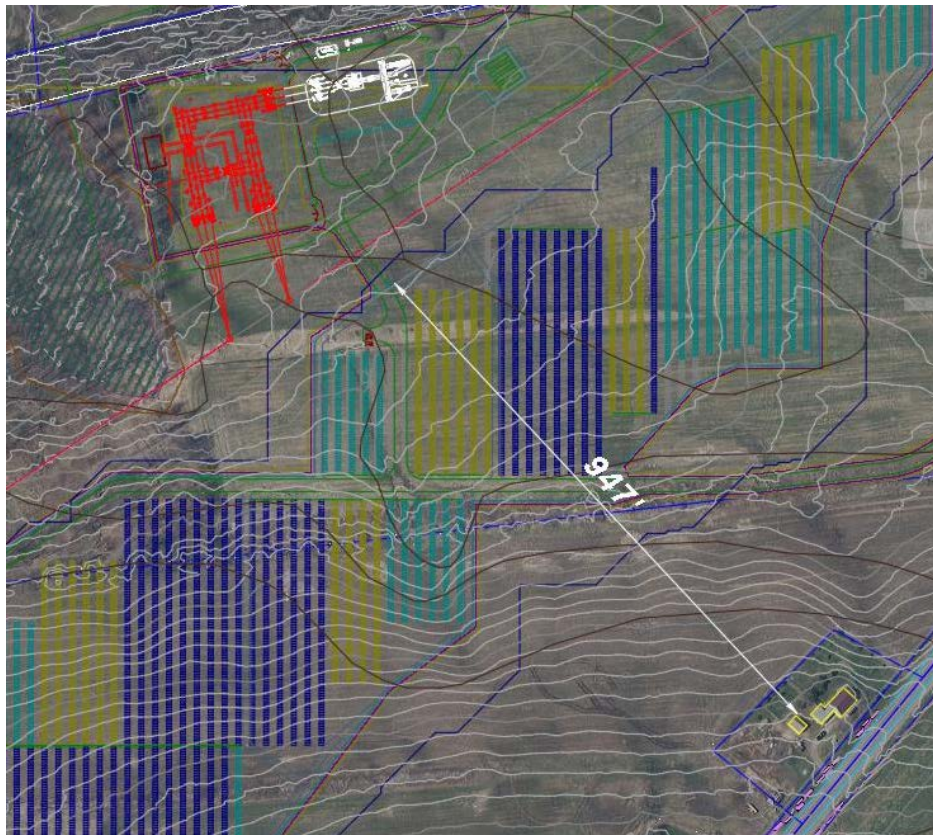
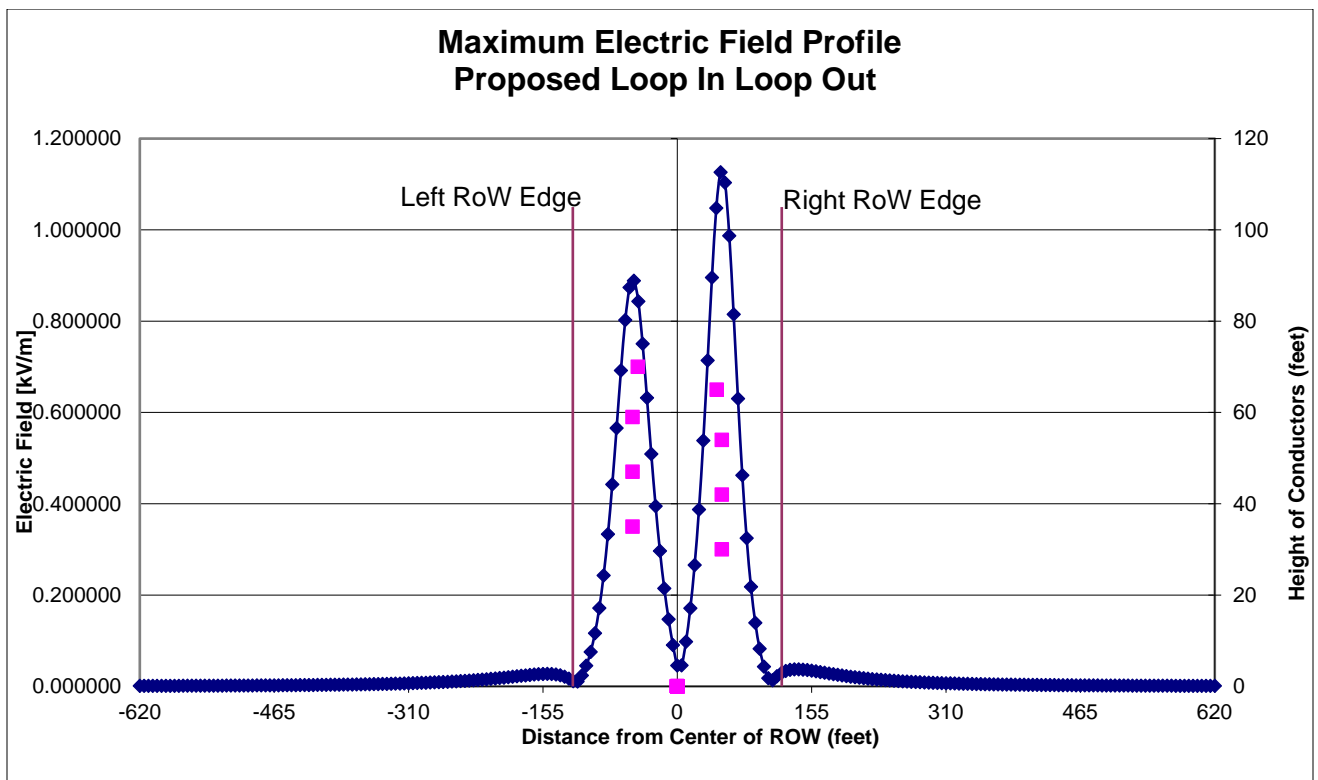
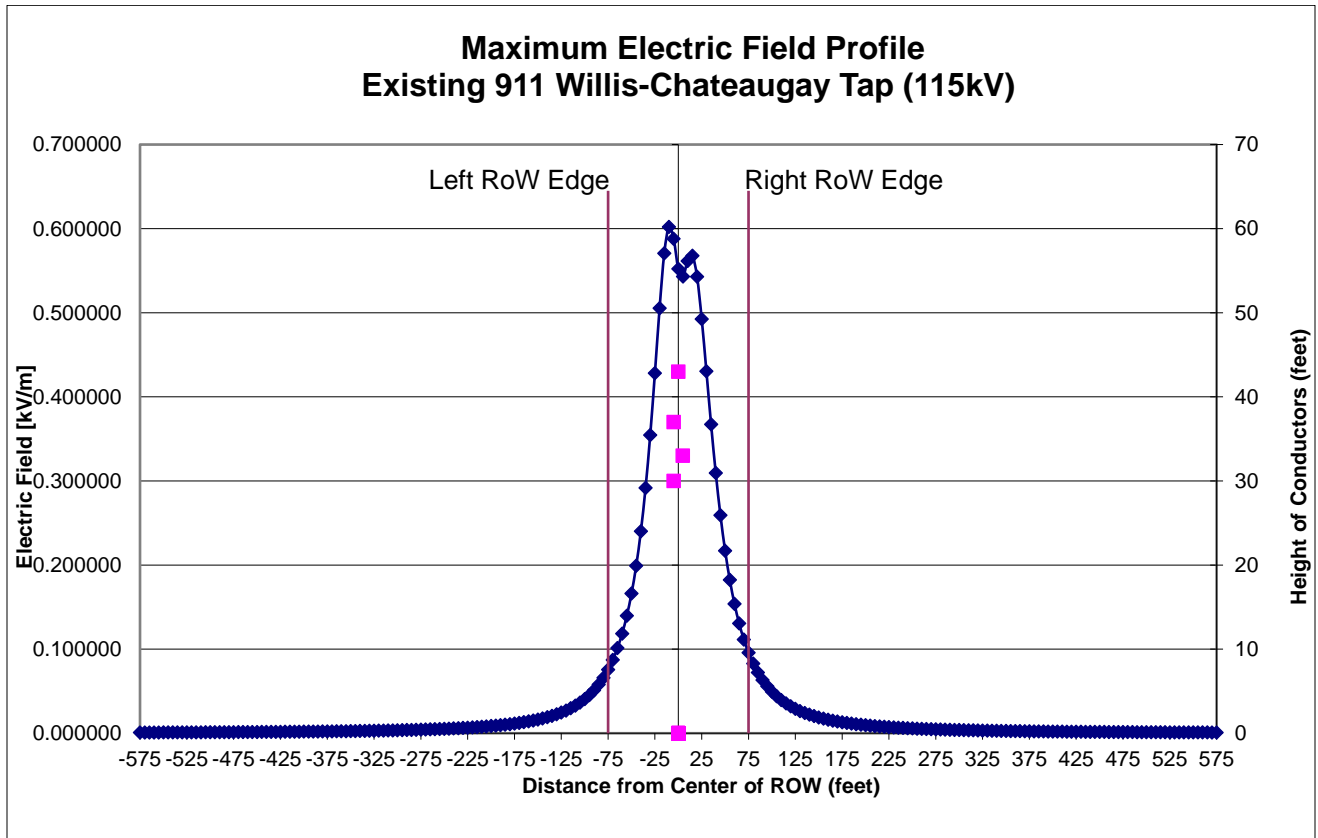
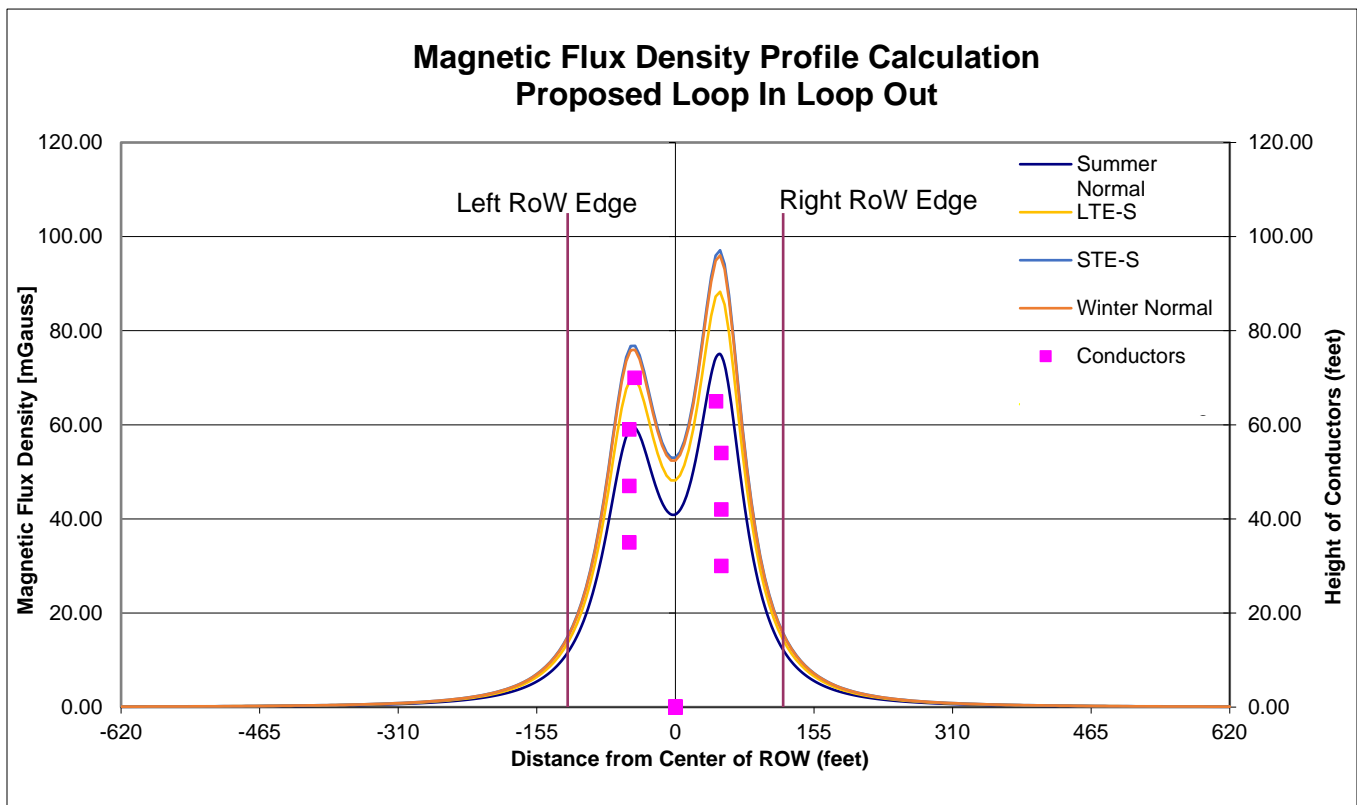
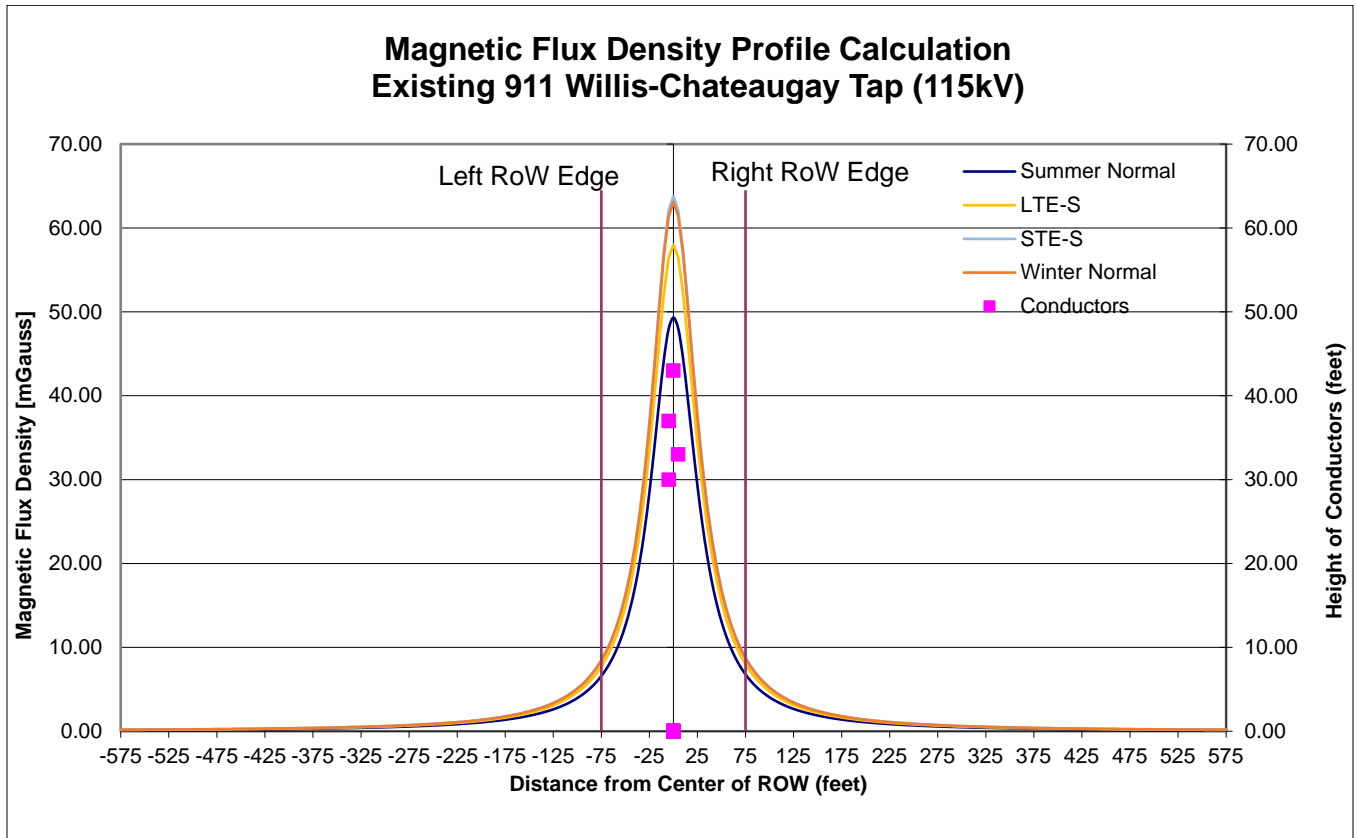


Figure 4: Nearest Residence





4.0 Conclusions

The maximum calculated electric field level for the existing NYSEG Line 911 Willis Rd to Chateaugay 115kV transmission line is 0.6 kV/m located 10 ft from the centerline of the existing ROW. The maximum calculated electric field level at the edge of the existing ROW is 0.096 kV/m. The maximum calculated electric field level on the proposed loop in loop out transmission connection is 1.1 kV/m located 50 ft from the centerline. The study reveals that the calculated electric field levels at the edge of the proposed right-of-way, located 120.5 feet from the centerline, is 0.030 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 NYSEG Line 911 Willis Rd to Chateaugay 115kV transmission line is 63.82 mG located at the centerline of the existing ROW. The maximum calculated magnetic field level at the edge of the existing ROW is 8.77 mG. The maximum calculated magnetic field level on the proposed loop in loop out transmission connection is 97.11 mG located 50 feet from the centerline of the proposed ROW. The study reveals that the calculated magnetic field level at the edge of the proposed right-of-way, located 120.5 feet from the centerline, is 15.94 mG, well below the 200 mG maximum field level permitted at the edge of a transmission right-of-way in New York occupied by a major transmission line as per the NYS PSC Interim Guideline.

This report demonstrates that the EMF levels associated with the proposed loop in loop out transmission connection between the proposed NYSEG substation and the existing NYSEG Line 911 Willis Rd to Chateaugay 115kV line are within established guidelines. The nearest residence to the interconnection is approximately 950 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 15 feet from the Facility Site 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 Site boundaries.

5.0 Appendix A: Software Output Tables & Input Data

Existing 911 Willis Rd to Chateaugay 115kV

Distance from ROW Center	Electric	Magnetic Field			
	Field	SN	LTE-S	STE-S	N-W
-575	0.0009	0.1312	0.1544	0.1698	0.1679
-570	0.0010	0.1335	0.1571	0.1728	0.1708
-565	0.0010	0.1359	0.1599	0.1759	0.1739
-560	0.0010	0.1383	0.1627	0.1790	0.1770
-555	0.0010	0.1408	0.1657	0.1822	0.1801
-550	0.0010	0.1434	0.1687	0.1855	0.1834
-545	0.0010	0.1460	0.1718	0.1889	0.1868
-540	0.0011	0.1487	0.1749	0.1924	0.1903
-535	0.0011	0.1515	0.1782	0.1960	0.1938
-530	0.0011	0.1543	0.1816	0.1997	0.1975
-525	0.0011	0.1573	0.1850	0.2035	0.2012
-520	0.0012	0.1603	0.1886	0.2075	0.2051
-515	0.0012	0.1634	0.1923	0.2115	0.2091
-510	0.0012	0.1666	0.1960	0.2156	0.2132
-505	0.0012	0.1699	0.1999	0.2199	0.2174
-500	0.0013	0.1733	0.2039	0.2243	0.2218
-495	0.0013	0.1768	0.2080	0.2288	0.2262
-490	0.0013	0.1804	0.2123	0.2335	0.2309
-485	0.0013	0.1842	0.2167	0.2383	0.2356
-480	0.0014	0.1880	0.2212	0.2433	0.2405
-475	0.0014	0.1920	0.2258	0.2484	0.2456
-470	0.0014	0.1960	0.2306	0.2537	0.2508
-465	0.0015	0.2002	0.2356	0.2591	0.2562
-460	0.0015	0.2046	0.2407	0.2648	0.2618
-455	0.0015	0.2091	0.2460	0.2706	0.2675
-450	0.0016	0.2137	0.2515	0.2766	0.2735
-445	0.0016	0.2185	0.2571	0.2828	0.2796
-440	0.0016	0.2235	0.2630	0.2892	0.2860
-435	0.0017	0.2286	0.2690	0.2959	0.2925
-430	0.0017	0.2340	0.2752	0.3028	0.2993
-425	0.0017	0.2395	0.2817	0.3099	0.3064
-420	0.0018	0.2452	0.2884	0.3173	0.3137
-415	0.0018	0.2511	0.2954	0.3249	0.3212
-410	0.0019	0.2572	0.3026	0.3328	0.3290
-405	0.0019	0.2635	0.3100	0.3410	0.3372
-400	0.0020	0.2701	0.3178	0.3496	0.3456
-395	0.0020	0.2769	0.3258	0.3584	0.3543
-390	0.0021	0.2840	0.3342	0.3676	0.3634
-385	0.0021	0.2914	0.3428	0.3771	0.3728
-380	0.0022	0.2991	0.3518	0.3870	0.3826
-375	0.0023	0.3070	0.3612	0.3973	0.3928
-370	0.0023	0.3153	0.3709	0.4080	0.4034
-365	0.0024	0.3239	0.3811	0.4192	0.4144
-360	0.0025	0.3329	0.3917	0.4308	0.4259
-355	0.0025	0.3423	0.4027	0.4429	0.4379
-350	0.0026	0.3520	0.4142	0.4556	0.4504
-345	0.0027	0.3622	0.4261	0.4687	0.4634
-340	0.0028	0.3728	0.4386	0.4825	0.4770
-335	0.0029	0.3839	0.4517	0.4969	0.4912

Existing 911 Willis Rd to Chateaugay 115kV

Distance from ROW Center	Electric	Magnetic Field			
	Field	SN	LTE-S	STE-S	N-W
-330	0.0030	0.3955	0.4654	0.5119	0.5061
-325	0.0030	0.4077	0.4796	0.5276	0.5216
-320	0.0031	0.4204	0.4946	0.5440	0.5379
-315	0.0033	0.4337	0.5102	0.5612	0.5549
-310	0.0034	0.4476	0.5266	0.5793	0.5727
-305	0.0035	0.4623	0.5438	0.5982	0.5914
-300	0.0036	0.4776	0.5619	0.6181	0.6111
-295	0.0037	0.4937	0.5809	0.6390	0.6317
-290	0.0039	0.5107	0.6008	0.6609	0.6534
-285	0.0040	0.5285	0.6218	0.6840	0.6762
-280	0.0042	0.5473	0.6439	0.7083	0.7002
-275	0.0043	0.5671	0.6672	0.7339	0.7256
-270	0.0045	0.5880	0.6918	0.7609	0.7523
-265	0.0047	0.6101	0.7177	0.7895	0.7805
-260	0.0049	0.6334	0.7452	0.8197	0.8104
-255	0.0051	0.6581	0.7742	0.8516	0.8419
-250	0.0053	0.6842	0.8049	0.8854	0.8754
-245	0.0056	0.7119	0.8376	0.9213	0.9109
-240	0.0058	0.7414	0.8722	0.9594	0.9485
-235	0.0061	0.7726	0.9090	0.9999	0.9885
-230	0.0064	0.8059	0.9482	1.0430	1.0311
-225	0.0067	0.8414	0.9899	1.0889	1.0765
-220	0.0070	0.8793	1.0345	1.1379	1.1250
-215	0.0074	0.9198	1.0821	1.1903	1.1767
-210	0.0078	0.9631	1.1330	1.2463	1.2321
-205	0.0082	1.0095	1.1876	1.3064	1.2915
-200	0.0086	1.0593	1.2462	1.3708	1.3553
-195	0.0091	1.1129	1.3092	1.4402	1.4238
-190	0.0097	1.1706	1.3771	1.5148	1.4976
-185	0.0103	1.2328	1.4504	1.5954	1.5773
-180	0.0109	1.3002	1.5296	1.6826	1.6634
-175	0.0116	1.3731	1.6154	1.7769	1.7568
-170	0.0124	1.4523	1.7086	1.8794	1.8581
-165	0.0132	1.5384	1.8099	1.9909	1.9683
-160	0.0142	1.6324	1.9205	2.1125	2.0885
-155	0.0152	1.7351	2.0413	2.2455	2.2199
-150	0.0164	1.8477	2.1738	2.3912	2.3640
-145	0.0177	1.9715	2.3194	2.5513	2.5224
-140	0.0191	2.1079	2.4799	2.7279	2.6969
-135	0.0207	2.2588	2.6574	2.9231	2.8899
-130	0.0226	2.4261	2.8542	3.1397	3.1040
-125	0.0247	2.6124	3.0734	3.3807	3.3423
-120	0.0270	2.8204	3.3182	3.6500	3.6085
-115	0.0297	3.0538	3.5927	3.9520	3.9071
-110	0.0329	3.3166	3.9019	4.2921	4.2433
-105	0.0365	3.6139	4.2517	4.6769	4.6237
-100	0.0406	3.9518	4.6492	5.1141	5.0560
-95	0.0455	4.3377	5.1032	5.6135	5.5497
-90	0.0512	4.7808	5.6244	6.1869	6.1166

Existing 911 Willis Rd to Chateaugay 115kV

Distance from ROW Center	Electric	Magnetic Field			
	Field	SN	LTE-S	STE-S	N-W
-85	0.0580	5.2924	6.2264	6.8490	6.7712
-80	0.0660	5.8868	6.9256	7.6182	7.5316
-75	0.0756	6.5817	7.7431	8.5174	8.4206
-70	0.0873	7.3995	8.7052	9.5758	9.4670
-65	0.1013	8.3687	9.8455	10.8301	10.7070
-60	0.1186	9.5257	11.2067	12.3273	12.1872
-55	0.1398	10.9168	12.8432	14.1276	13.9670
-50	0.1662	12.6011	14.8249	16.3074	16.1220
-45	0.1991	14.6534	17.2393	18.9632	18.7477
-40	0.2403	17.1652	20.1943	22.2137	21.9613
-35	0.2917	20.2426	23.8148	26.1963	25.8986
-30	0.3547	23.9915	28.2253	31.0478	30.6950
-25	0.4281	28.4762	33.5014	36.8515	36.4328
-20	0.5054	33.6313	39.5662	43.5228	43.0283
-15	0.5708	39.1242	46.0285	50.6314	50.0560
-10	0.6021	44.2377	52.0444	57.2488	56.5982
-5	0.5879	47.9460	56.4070	62.0477	61.3426
0	0.5523	49.3142	58.0167	63.8184	63.0931
5	0.5431	48.0073	56.4791	62.1271	61.4211
10	0.5616	44.4608	52.3068	57.5375	56.8836
15	0.5679	39.5831	46.5683	51.2252	50.6431
20	0.5429	34.2973	40.3498	44.3848	43.8804
25	0.4926	29.2530	34.4153	37.8569	37.4267
30	0.4304	24.7804	29.1534	32.0687	31.7043
35	0.3673	20.9771	24.6790	27.1469	26.8384
40	0.3094	17.8141	20.9578	23.0536	22.7916
45	0.2592	15.2096	17.8937	19.6831	19.4594
50	0.2171	13.0705	15.3770	16.9147	16.7225
55	0.1824	11.3101	13.3060	14.6366	14.4703
60	0.1539	9.8550	11.5941	12.7535	12.6086
65	0.1306	8.6450	10.1706	11.1876	11.0605
70	0.1115	7.6322	8.9791	9.8770	9.7648
75	0.0959	6.7788	7.9751	8.7726	8.6729
80	0.0830	6.0547	7.1232	7.8355	7.7464
85	0.0723	5.4363	6.3956	7.0352	6.9552
90	0.0633	4.9047	5.7702	6.3473	6.2751
95	0.0558	4.4451	5.2295	5.7525	5.6871
100	0.0495	4.0454	4.7593	5.2352	5.1757
105	0.0441	3.6959	4.3481	4.7829	4.7286
110	0.0395	3.3888	3.9868	4.3855	4.3356
115	0.0355	3.1176	3.6677	4.0345	3.9887
120	0.0321	2.8771	3.3848	3.7233	3.6810
125	0.0291	2.6628	3.1328	3.4460	3.4069
130	0.0265	2.4713	2.9074	3.1981	3.1618
135	0.0242	2.2994	2.7051	2.9757	2.9418
140	0.0222	2.1445	2.5230	2.7753	2.7437
145	0.0204	2.0046	2.3584	2.5942	2.5647
150	0.0189	1.8778	2.2091	2.4301	2.4024
155	0.0175	1.7625	2.0735	2.2808	2.2549

Existing 911 Willis Rd to Chateaugay 115kV

Distance from ROW Center	Electric	Magnetic Field			
	Field	SN	LTE-S	STE-S	N-W
160	0.0162	1.6573	1.9498	2.1448	2.1204
165	0.0151	1.5613	1.8368	2.0204	1.9975
170	0.0141	1.4732	1.7332	1.9065	1.8848
175	0.0131	1.3923	1.6380	1.8018	1.7814
180	0.0123	1.3179	1.5504	1.7055	1.6861
185	0.0115	1.2492	1.4696	1.6166	1.5982
190	0.0108	1.1857	1.3949	1.5344	1.5170
195	0.0102	1.1269	1.3257	1.4583	1.4417
200	0.0096	1.0723	1.2615	1.3877	1.3719
205	0.0091	1.0216	1.2019	1.3220	1.3070
210	0.0086	0.9743	1.1463	1.2609	1.2466
215	0.0082	0.9303	1.0945	1.2039	1.1902
220	0.0078	0.8891	1.0460	1.1506	1.1376
225	0.0074	0.8506	1.0008	1.1008	1.0883
230	0.0070	0.8146	0.9583	1.0542	1.0422
235	0.0067	0.7808	0.9185	1.0104	0.9989
240	0.0064	0.7490	0.8811	0.9693	0.9582
245	0.0061	0.7191	0.8460	0.9306	0.9200
250	0.0058	0.6910	0.8129	0.8942	0.8840
255	0.0056	0.6644	0.7817	0.8599	0.8501
260	0.0053	0.6394	0.7522	0.8275	0.8181
265	0.0051	0.6157	0.7244	0.7968	0.7878
270	0.0049	0.5934	0.6981	0.7679	0.7592
275	0.0047	0.5722	0.6732	0.7405	0.7321
280	0.0045	0.5521	0.6496	0.7145	0.7064
285	0.0044	0.5331	0.6272	0.6899	0.6821
290	0.0042	0.5150	0.6059	0.6665	0.6589
295	0.0040	0.4979	0.5857	0.6443	0.6370
300	0.0039	0.4815	0.5665	0.6232	0.6161
305	0.0038	0.4660	0.5482	0.6031	0.5962
310	0.0036	0.4512	0.5308	0.5839	0.5773
315	0.0035	0.4371	0.5142	0.5657	0.5592
320	0.0034	0.4236	0.4984	0.5482	0.5420
325	0.0033	0.4108	0.4833	0.5316	0.5256
330	0.0032	0.3985	0.4688	0.5157	0.5099
335	0.0031	0.3868	0.4550	0.5005	0.4948
340	0.0030	0.3756	0.4418	0.4860	0.4805
345	0.0029	0.3648	0.4292	0.4721	0.4667
350	0.0028	0.3545	0.4171	0.4588	0.4536
355	0.0027	0.3447	0.4055	0.4460	0.4410
360	0.0026	0.3352	0.3944	0.4338	0.4289
365	0.0025	0.3261	0.3837	0.4220	0.4172
370	0.0025	0.3174	0.3734	0.4108	0.4061
375	0.0024	0.3090	0.3636	0.3999	0.3954
380	0.0023	0.3010	0.3541	0.3895	0.3851
385	0.0023	0.2933	0.3450	0.3795	0.3752
390	0.0022	0.2858	0.3363	0.3699	0.3657
395	0.0022	0.2787	0.3278	0.3606	0.3565
400	0.0021	0.2718	0.3197	0.3517	0.3477

Existing 911 Willis Rd to Chateaugay 115kV

Distance from ROW Center	Electric	Magnetic Field			
	Field	SN	LTE-S	STE-S	N-W
405	0.0020	0.2651	0.3119	0.3431	0.3392
410	0.0020	0.2587	0.3044	0.3348	0.3310
415	0.0019	0.2526	0.2971	0.3268	0.3231
420	0.0019	0.2466	0.2901	0.3191	0.3155
425	0.0018	0.2409	0.2834	0.3117	0.3082
430	0.0018	0.2353	0.2768	0.3045	0.3011
435	0.0018	0.2299	0.2705	0.2976	0.2942
440	0.0017	0.2248	0.2644	0.2909	0.2876
445	0.0017	0.2198	0.2585	0.2844	0.2812
450	0.0016	0.2149	0.2528	0.2781	0.2750
455	0.0016	0.2102	0.2473	0.2721	0.2690
460	0.0016	0.2057	0.2420	0.2662	0.2632
465	0.0015	0.2013	0.2368	0.2605	0.2576
470	0.0015	0.1971	0.2318	0.2550	0.2521
475	0.0015	0.1930	0.2270	0.2497	0.2469
480	0.0014	0.1890	0.2223	0.2445	0.2418
485	0.0014	0.1851	0.2178	0.2395	0.2368
490	0.0014	0.1813	0.2133	0.2347	0.2320
495	0.0013	0.1777	0.2091	0.2300	0.2274
500	0.0013	0.1742	0.2049	0.2254	0.2229
505	0.0013	0.1708	0.2009	0.2210	0.2185
510	0.0013	0.1674	0.1970	0.2167	0.2142
515	0.0012	0.1642	0.1932	0.2125	0.2101
520	0.0012	0.1611	0.1895	0.2084	0.2061
525	0.0012	0.1580	0.1859	0.2045	0.2022
530	0.0012	0.1551	0.1824	0.2007	0.1984
535	0.0011	0.1522	0.1790	0.1969	0.1947
540	0.0011	0.1494	0.1757	0.1933	0.1911
545	0.0011	0.1467	0.1725	0.1898	0.1876
550	0.0011	0.1440	0.1694	0.1864	0.1842
555	0.0011	0.1414	0.1664	0.1830	0.1810
560	0.0010	0.1389	0.1634	0.1798	0.1777
565	0.0010	0.1365	0.1606	0.1766	0.1746
570	0.0010	0.1341	0.1578	0.1735	0.1716
575	0.0010	0.1318	0.1550	0.1705	0.1686

Proposed Loop In Loop Out

Distance from ROW Center	Electric	Magnetic Field			
	Field	SN	LTE-S	STE-S	N-W
-620	0.0011	0.0807	0.0950	0.1045	0.1033
-615	0.0011	0.0827	0.0973	0.1070	0.1058
-610	0.0011	0.0848	0.0997	0.1097	0.1085
-605	0.0011	0.0869	0.1022	0.1125	0.1112
-600	0.0012	0.0891	0.1048	0.1153	0.1140
-595	0.0012	0.0914	0.1075	0.1183	0.1169
-590	0.0012	0.0937	0.1103	0.1213	0.1199
-585	0.0013	0.0962	0.1131	0.1245	0.1230
-580	0.0013	0.0987	0.1161	0.1277	0.1263
-575	0.0013	0.1013	0.1192	0.1311	0.1296
-570	0.0013	0.1040	0.1223	0.1346	0.1331
-565	0.0014	0.1068	0.1256	0.1382	0.1366
-560	0.0014	0.1097	0.1291	0.1420	0.1403
-555	0.0014	0.1127	0.1326	0.1458	0.1442
-550	0.0015	0.1158	0.1363	0.1499	0.1482
-545	0.0015	0.1190	0.1401	0.1541	0.1523
-540	0.0015	0.1224	0.1440	0.1584	0.1566
-535	0.0016	0.1259	0.1481	0.1629	0.1611
-530	0.0016	0.1295	0.1524	0.1676	0.1657
-525	0.0017	0.1333	0.1568	0.1725	0.1705
-520	0.0017	0.1372	0.1614	0.1775	0.1755
-515	0.0017	0.1412	0.1661	0.1827	0.1807
-510	0.0018	0.1454	0.1711	0.1882	0.1861
-505	0.0018	0.1498	0.1763	0.1939	0.1917
-500	0.0019	0.1544	0.1816	0.1998	0.1975
-495	0.0019	0.1591	0.1872	0.2059	0.2036
-490	0.0020	0.1641	0.1931	0.2124	0.2099
-485	0.0020	0.1693	0.1991	0.2190	0.2165
-480	0.0021	0.1746	0.2054	0.2260	0.2234
-475	0.0022	0.1802	0.2120	0.2332	0.2306
-470	0.0022	0.1861	0.2189	0.2408	0.2381
-465	0.0023	0.1922	0.2261	0.2487	0.2459
-460	0.0024	0.1986	0.2336	0.2570	0.2541
-455	0.0024	0.2052	0.2415	0.2656	0.2626
-450	0.0025	0.2122	0.2497	0.2746	0.2715
-445	0.0026	0.2195	0.2582	0.2841	0.2808
-440	0.0027	0.2271	0.2672	0.2939	0.2906
-435	0.0027	0.2351	0.2766	0.3042	0.3008
-430	0.0028	0.2435	0.2864	0.3151	0.3115
-425	0.0029	0.2522	0.2967	0.3264	0.3227
-420	0.0030	0.2614	0.3075	0.3383	0.3344
-415	0.0031	0.2710	0.3189	0.3508	0.3468
-410	0.0032	0.2812	0.3308	0.3639	0.3597
-405	0.0033	0.2918	0.3433	0.3776	0.3733
-400	0.0034	0.3030	0.3564	0.3921	0.3876
-395	0.0035	0.3147	0.3703	0.4073	0.4027
-390	0.0037	0.3271	0.3848	0.4233	0.4185
-385	0.0038	0.3401	0.4002	0.4402	0.4352
-380	0.0039	0.3539	0.4163	0.4579	0.4527
-375	0.0041	0.3683	0.4334	0.4767	0.4713
-370	0.0042	0.3836	0.4513	0.4965	0.4908
-365	0.0044	0.3998	0.4703	0.5174	0.5115

Proposed Loop In Loop Out

Distance from ROW Center	Electric	Magnetic Field			
	Field	SN	LTE-S	STE-S	N-W
-360	0.0045	0.4168	0.4904	0.5394	0.5333
-355	0.0047	0.4349	0.5116	0.5628	0.5564
-350	0.0049	0.4540	0.5341	0.5875	0.5809
-345	0.0051	0.4743	0.5579	0.6137	0.6068
-340	0.0053	0.4957	0.5832	0.6415	0.6342
-335	0.0055	0.5185	0.6100	0.6710	0.6634
-330	0.0057	0.5427	0.6385	0.7024	0.6944
-325	0.0059	0.5685	0.6688	0.7357	0.7273
-320	0.0062	0.5959	0.7010	0.7711	0.7624
-315	0.0064	0.6251	0.7354	0.8089	0.7997
-310	0.0067	0.6562	0.7720	0.8492	0.8396
-305	0.0070	0.6894	0.8111	0.8922	0.8821
-300	0.0073	0.7250	0.8529	0.9382	0.9275
-295	0.0076	0.7630	0.8976	0.9874	0.9762
-290	0.0080	0.8037	0.9456	1.0401	1.0283
-285	0.0083	0.8474	0.9969	1.0966	1.0842
-280	0.0087	0.8943	1.0521	1.1573	1.1442
-275	0.0091	0.9448	1.1115	1.2226	1.2087
-270	0.0096	0.9991	1.1754	1.2929	1.2782
-265	0.0100	1.0576	1.2443	1.3687	1.3531
-260	0.0105	1.1208	1.3186	1.4505	1.4340
-255	0.0110	1.1892	1.3991	1.5390	1.5215
-250	0.0116	1.2633	1.4862	1.6348	1.6163
-245	0.0121	1.3436	1.5807	1.7388	1.7190
-240	0.0128	1.4309	1.6834	1.8518	1.8307
-235	0.0134	1.5259	1.7952	1.9747	1.9523
-230	0.0141	1.6295	1.9171	2.1088	2.0849
-225	0.0148	1.7428	2.0503	2.2553	2.2297
-220	0.0156	1.8667	2.1961	2.4157	2.3883
-215	0.0164	2.0026	2.3560	2.5916	2.5622
-210	0.0173	2.1521	2.5319	2.7850	2.7534
-205	0.0182	2.3167	2.7256	2.9981	2.9641
-200	0.0191	2.4986	2.9395	3.2334	3.1967
-195	0.0201	2.6998	3.1763	3.4939	3.4542
-190	0.0211	2.9232	3.4391	3.7830	3.7400
-185	0.0221	3.1717	3.7315	4.1046	4.0580
-180	0.0231	3.4491	4.0577	4.4635	4.4128
-175	0.0241	3.7594	4.4228	4.8651	4.8098
-170	0.0250	4.1076	4.8325	5.3157	5.2553
-165	0.0259	4.4997	5.2938	5.8231	5.7570
-160	0.0266	4.9425	5.8147	6.3962	6.3235
-155	0.0271	5.4443	6.4051	7.0456	6.9655
-150	0.0273	6.0150	7.0764	7.7841	7.6956
-145	0.0270	6.6661	7.8425	8.6267	8.5287
-140	0.0261	7.4119	8.7199	9.5919	9.4829
-135	0.0243	8.2691	9.7284	10.7012	10.5796
-130	0.0213	9.2580	10.8918	11.9810	11.8449
-125	0.0169	10.4030	12.2388	13.4627	13.3097
-120	0.0113	11.7330	13.8035	15.1839	15.0113
-115	0.0105	13.2827	15.6268	17.1894	16.9941
-110	0.0241	15.0930	17.7565	19.5321	19.3102

Proposed Loop In Loop Out

Distance from ROW Center	Electric	Magnetic Field			
	Field	SN	LTE-S	STE-S	N-W
-105	0.0453	17.2110	20.2483	22.2731	22.0200
-100	0.0754	19.6901	23.1648	25.4813	25.1917
-95	0.1165	22.5870	26.5729	29.2302	28.8980
-90	0.1714	25.9566	30.5372	33.5909	33.2092
-85	0.2430	29.8410	35.1071	38.6178	38.1790
-80	0.3333	34.2486	40.2925	44.3217	43.8180
-75	0.4423	39.1211	46.0248	50.6273	50.0520
-70	0.5657	44.2877	52.1032	57.3135	56.6622
-65	0.6919	49.4180	58.1388	63.9526	63.2259
-60	0.8023	54.0105	63.5418	69.8960	69.1017
-55	0.8738	57.4721	67.6143	74.3757	73.5305
-50	0.8887	59.3081	69.7743	76.7517	75.8795
-45	0.8434	59.3395	69.8112	76.7923	75.9196
-40	0.7506	57.7833	67.9804	74.7784	73.9287
-35	0.6321	55.1348	64.8645	71.3509	70.5401
-30	0.5089	51.9605	61.1300	67.2430	66.4789
-25	0.3948	48.7464	57.3486	63.0835	62.3667
-20	0.2965	45.8451	53.9354	59.3290	58.6548
-15	0.2146	43.4901	51.1648	56.2813	55.6417
-10	0.1471	41.8303	49.2121	54.1333	53.5182
-5	0.0906	40.9627	48.1914	53.0105	52.4081
0	0.0458	40.9538	48.1809	52.9990	52.3968
5	0.0460	41.8514	49.2369	54.1606	53.5451
10	0.0980	43.6887	51.3984	56.5383	55.8958
15	0.1710	46.4822	54.6850	60.1535	59.4699
20	0.2657	50.2188	59.0809	64.9890	64.2505
25	0.3872	54.8231	64.4977	70.9475	70.1413
30	0.5383	60.0965	70.7017	77.7719	76.8881
35	0.7141	65.6208	77.2010	84.9210	83.9560
40	0.8958	70.6587	83.1279	91.4407	90.4016
45	1.0478	74.1591	87.2460	95.9706	94.8800
50	1.1264	75.0386	88.2807	97.1087	96.0052
55	1.1035	72.7351	85.5707	94.1277	93.0581
60	0.9871	67.6038	79.5339	87.4873	86.4931
65	0.8150	60.7059	71.4187	78.5605	77.6678
70	0.6302	53.2091	62.5990	68.8589	68.0764
75	0.4625	45.9607	54.0714	59.4786	58.8027
80	0.3246	39.4089	46.3635	50.9998	50.4203
85	0.2181	33.7103	39.6592	43.6252	43.1294
90	0.1392	28.8579	33.9504	37.3455	36.9211
95	0.0826	24.7704	29.1416	32.0558	31.6915
100	0.0432	21.3430	25.1095	27.6204	27.3065
105	0.0181	18.4713	21.7310	23.9041	23.6324
110	0.0134	16.0613	18.8957	20.7853	20.5491
115	0.0221	14.0327	16.5091	18.1600	17.9537
120	0.0292	12.3186	14.4924	15.9417	15.7605
125	0.0337	10.8638	12.7809	14.0590	13.8993
130	0.0362	9.6235	11.3217	12.4539	12.3124
135	0.0372	8.5611	10.0718	11.0790	10.9531
140	0.0373	7.6468	8.9962	9.8959	9.7834
145	0.0367	6.8564	8.0664	8.8730	8.7722

Proposed Loop In Loop Out

Distance from ROW Center	Electric	Magnetic Field			
	Field	SN	LTE-S	STE-S	N-W
150	0.0357	6.1702	7.2590	7.9849	7.8942
155	0.0344	5.5717	6.5549	7.2104	7.1285
160	0.0329	5.0476	5.9384	6.5322	6.4580
165	0.0314	4.5869	5.3964	5.9360	5.8686
170	0.0298	4.1804	4.9181	5.4100	5.3485
175	0.0282	3.8204	4.4946	4.9441	4.8879
180	0.0267	3.5005	4.1183	4.5301	4.4786
185	0.0252	3.2153	3.7827	4.1610	4.1137
190	0.0238	2.9603	3.4826	3.8309	3.7874
195	0.0225	2.7315	3.2135	3.5348	3.4947
200	0.0212	2.5257	2.9714	3.2685	3.2314
205	0.0201	2.3401	2.7530	3.0283	2.9939
210	0.0189	2.1722	2.5556	2.8111	2.7792
215	0.0179	2.0201	2.3766	2.6143	2.5846
220	0.0169	1.8819	2.2140	2.4354	2.4077
225	0.0160	1.7560	2.0659	2.2725	2.2467
230	0.0151	1.6411	1.9308	2.1238	2.0997
235	0.0143	1.5361	1.8072	1.9879	1.9653
240	0.0136	1.4399	1.6940	1.8634	1.8422
245	0.0129	1.3515	1.5900	1.7490	1.7291
250	0.0122	1.2703	1.4944	1.6439	1.6252
255	0.0116	1.1954	1.4064	1.5470	1.5294
260	0.0110	1.1264	1.3251	1.4576	1.4411
265	0.0105	1.0625	1.2500	1.3750	1.3594
270	0.0100	1.0034	1.1805	1.2986	1.2838
275	0.0095	0.9487	1.1161	1.2277	1.2137
280	0.0091	0.8978	1.0563	1.1619	1.1487
285	0.0086	0.8506	1.0007	1.1007	1.0882
290	0.0083	0.8066	0.9489	1.0438	1.0319
295	0.0079	0.7656	0.9007	0.9907	0.9795
300	0.0075	0.7273	0.8556	0.9412	0.9305
305	0.0072	0.6915	0.8136	0.8949	0.8848
310	0.0069	0.6581	0.7742	0.8517	0.8420
315	0.0066	0.6268	0.7374	0.8111	0.8019
320	0.0063	0.5974	0.7029	0.7732	0.7644
325	0.0061	0.5699	0.6705	0.7375	0.7291
330	0.0058	0.5440	0.6400	0.7040	0.6960
335	0.0056	0.5197	0.6114	0.6726	0.6649
340	0.0054	0.4968	0.5845	0.6429	0.6356
345	0.0051	0.4752	0.5591	0.6150	0.6080
350	0.0050	0.4549	0.5352	0.5887	0.5820
355	0.0048	0.4357	0.5126	0.5639	0.5575
360	0.0046	0.4176	0.4913	0.5404	0.5343
365	0.0044	0.4005	0.4712	0.5183	0.5124
370	0.0043	0.3843	0.4521	0.4973	0.4917
375	0.0041	0.3689	0.4341	0.4775	0.4720
380	0.0040	0.3544	0.4170	0.4587	0.4534
385	0.0038	0.3406	0.4008	0.4408	0.4358
390	0.0037	0.3276	0.3854	0.4239	0.4191
395	0.0036	0.3152	0.3708	0.4079	0.4032
400	0.0034	0.3034	0.3569	0.3926	0.3882

Proposed Loop In Loop Out

Distance from ROW Center	Electric	Magnetic Field			
	Field	SN	LTE-S	STE-S	N-W
405	0.0033	0.2922	0.3437	0.3781	0.3738
410	0.0032	0.2815	0.3312	0.3643	0.3602
415	0.0031	0.2714	0.3193	0.3512	0.3472
420	0.0030	0.2617	0.3079	0.3387	0.3348
425	0.0029	0.2525	0.2971	0.3268	0.3231
430	0.0028	0.2437	0.2867	0.3154	0.3118
435	0.0027	0.2353	0.2769	0.3046	0.3011
440	0.0026	0.2273	0.2675	0.2942	0.2909
445	0.0026	0.2197	0.2585	0.2843	0.2811
450	0.0025	0.2124	0.2499	0.2749	0.2718
455	0.0024	0.2054	0.2417	0.2658	0.2628
460	0.0023	0.1988	0.2338	0.2572	0.2543
465	0.0023	0.1924	0.2263	0.2489	0.2461
470	0.0022	0.1862	0.2191	0.2410	0.2383
475	0.0021	0.1804	0.2122	0.2334	0.2308
480	0.0021	0.1748	0.2056	0.2262	0.2236
485	0.0020	0.1694	0.1993	0.2192	0.2167
490	0.0020	0.1642	0.1932	0.2125	0.2101
495	0.0019	0.1593	0.1874	0.2061	0.2038
500	0.0019	0.1545	0.1818	0.1999	0.1977
505	0.0018	0.1499	0.1764	0.1940	0.1918
510	0.0018	0.1455	0.1712	0.1883	0.1862
515	0.0017	0.1413	0.1662	0.1829	0.1808
520	0.0017	0.1372	0.1615	0.1776	0.1756
525	0.0016	0.1333	0.1569	0.1726	0.1706
530	0.0016	0.1296	0.1524	0.1677	0.1658
535	0.0016	0.1260	0.1482	0.1630	0.1612
540	0.0015	0.1225	0.1441	0.1585	0.1567
545	0.0015	0.1191	0.1401	0.1541	0.1524
550	0.0014	0.1159	0.1363	0.1500	0.1483
555	0.0014	0.1128	0.1327	0.1459	0.1443
560	0.0014	0.1097	0.1291	0.1420	0.1404
565	0.0013	0.1068	0.1257	0.1383	0.1367
570	0.0013	0.1040	0.1224	0.1346	0.1331
575	0.0013	0.1013	0.1192	0.1311	0.1297
580	0.0013	0.0987	0.1162	0.1278	0.1263
585	0.0012	0.0962	0.1132	0.1245	0.1231
590	0.0012	0.0938	0.1103	0.1213	0.1200
595	0.0012	0.0914	0.1075	0.1183	0.1170
600	0.0011	0.0891	0.1049	0.1154	0.1140
605	0.0011	0.0869	0.1023	0.1125	0.1112
610	0.0011	0.0848	0.0998	0.1098	0.1085
615	0.0011	0.0827	0.0973	0.1071	0.1059
620	0.0011	0.0808	0.0950	0.1045	0.1033

EMF and Corona Effects Analysis

Calculation Identifier: **Line 911 Willis-Chateaugay Tap (115kV)**

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	-4.88	37.00	1	0.7410	0.000	115	680.00	0	existing	Offset from X=0 to Left RoW edge -75.00
2	4.88	33.00	1	0.7410	0.000	115	680.00	120		Offset from X=0 to RoW center 0.00
3	-4.88	30.00	1	0.7410	0.000	115	680.00	240		
4	0.00	43.00	1	0.2500	0.000	0	0.00	0		
NPH=		4.00								
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: **Proposed Brookside Loop In Loop Out**

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	-51.50	59.00	1	0.7410	0.000	115	680.00	0	left	Offset from X=0 to Left RoW edge -120.50
2	-51.50	47.00	1	0.7410	0.000	115	680.00	120		Offset from X=0 to RoW center 0.00
3	-51.50	35.00	1	0.7410	0.000	115	680.00	240		
4	51.50	30.00	1	0.7410	0.000	115	680.00	0	right	
5	51.50	42.00	1	0.7410	0.000	115	680.00	120		
6	51.50	54.00	1	0.7410	0.000	115	680.00	240		
7	-45.50	70.00	1	0.2500	0.000	0	0.00	0		
8	45.50	65.00	1	0.2500	0.000	0	0.00	0		
NPH=		8.00								
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)							