Appendix I

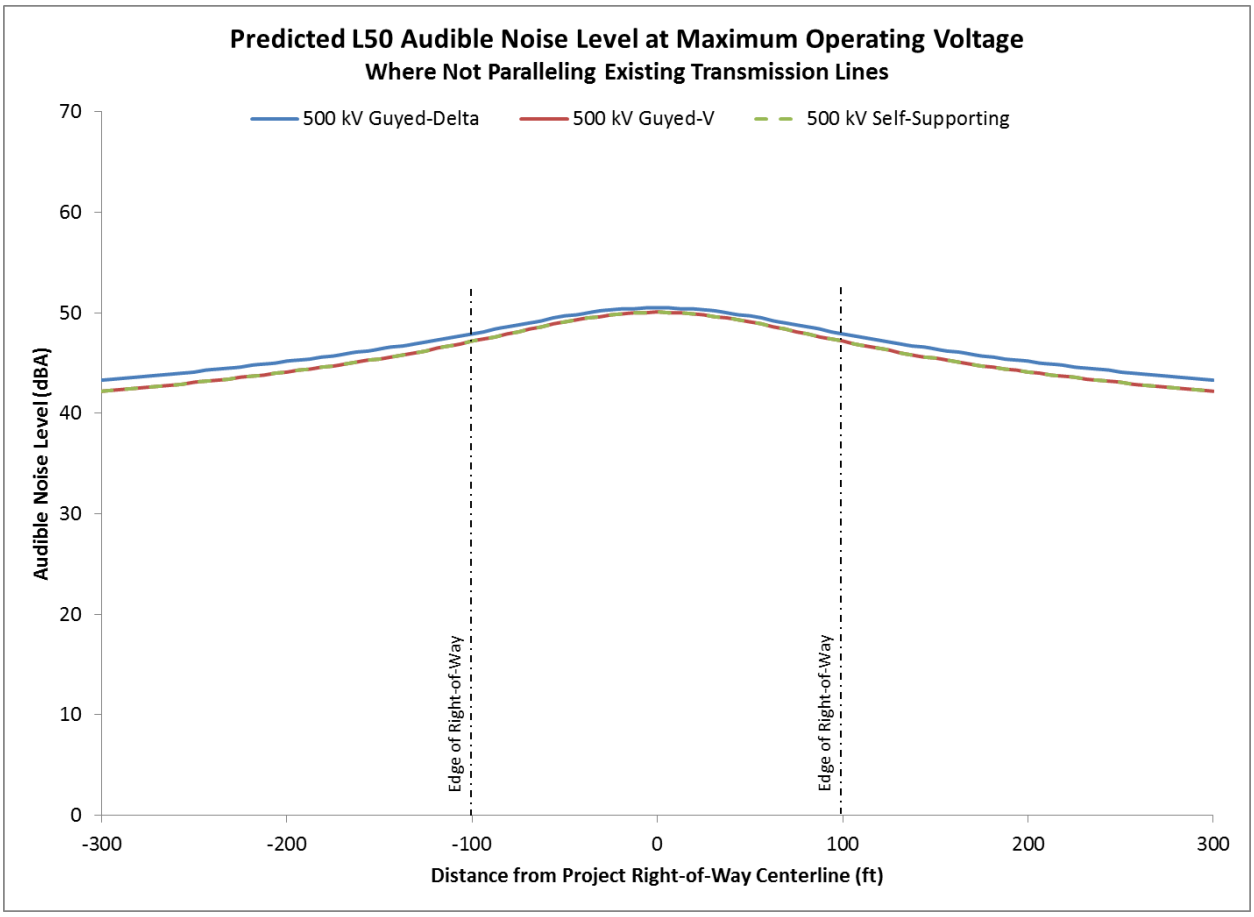
Applicant's Audible Noise and EMF Calculations

Audible Noise Simulation Results

Audible Noise Simulation Results

Predicted L50 Audible Noise Level (dBA) at Maximum Operating Voltage
Where Not Paralleling Existing Transmission Lines

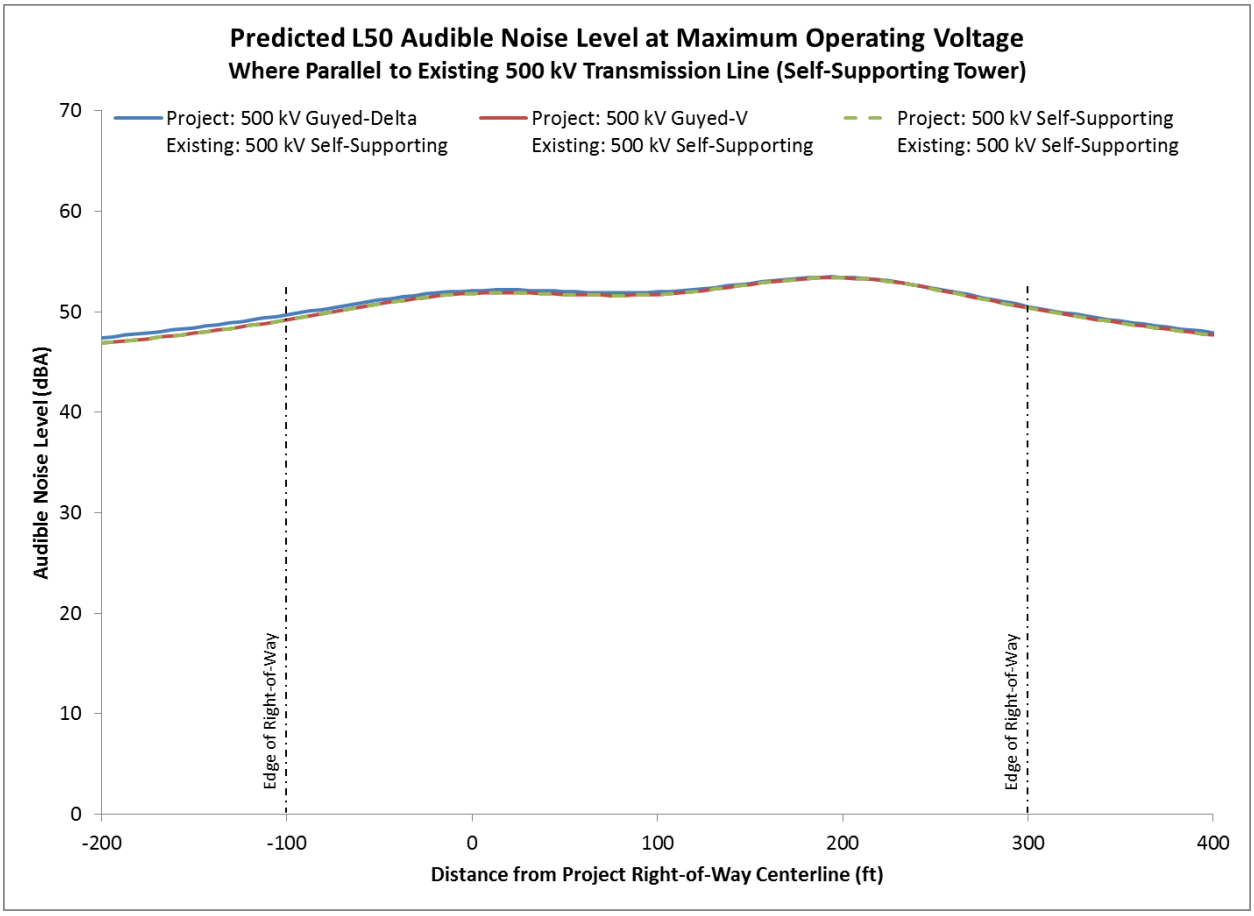
Structure Type	Line Voltage	Distance from Project ROW Centerline										
		-300	-200	-100	-50	-25	0	25	50	100	200	300
500 kV Guyed-Delta	550 kV	43.3	45.2	47.9	49.7	50.3	50.5	50.3	49.7	47.9	45.2	43.3
500 kV Guyed-V	550 kV	42.2	44.1	47.2	49.1	49.8	50.1	49.8	49.1	47.2	44.1	42.2
500 kV Self-Supporting	550 kV	42.2	44.1	47.2	49.1	49.8	50.1	49.8	49.1	47.2	44.1	42.2



Audible Noise Simulation Results

Predicted L50 Audible Noise Level (dBA) at Maximum Operating Voltage
Where Parallel to Existing 500 kV Transmission Line (Self-Supporting Tower)

Structure Type	Line Voltage	Distance from Project ROW Centerline										
		-200	-100	-50	-25	0	25	50	100	200	300	400
Project: 500 kV Guyed-Delta Existing: 500 kV Self-Supporting	550 kV 550 kV	47.4	49.7	51.2	51.8	52.1	52.2	52.0	52.0	53.4	50.5	47.9
Project: 500 kV Guyed-V Existing: 500 kV Self-Supporting	550 kV 550 kV	46.9	49.2	50.8	51.4	51.8	51.9	51.7	51.7	53.4	50.4	47.7
Project: 500 kV Self-Supporting Existing: 500 kV Self-Supporting	550 kV 550 kV	46.9	49.2	50.8	51.4	51.8	51.9	51.7	51.7	53.4	50.4	47.7

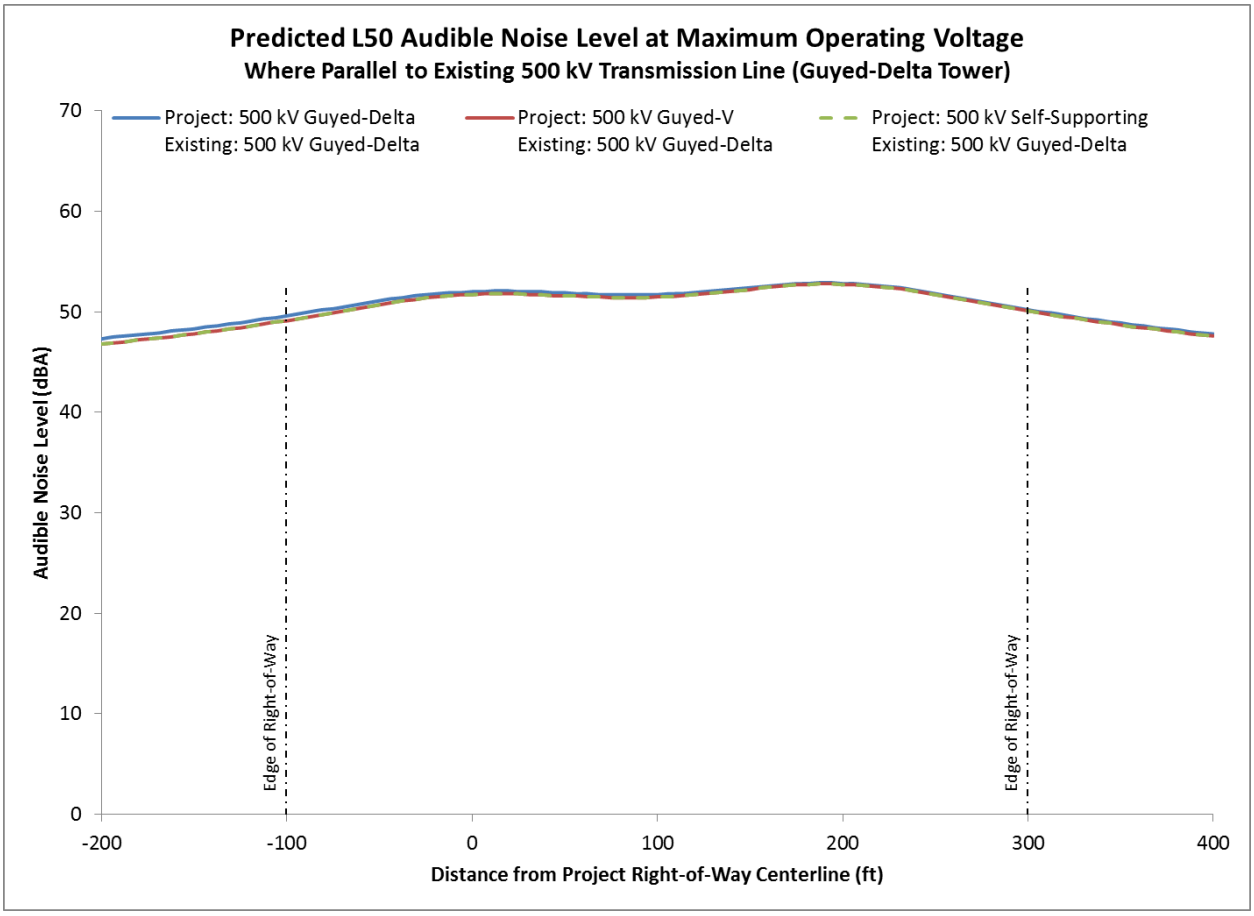


[Simulation assumes that Project ROW is adjacent to existing line ROW]

Audible Noise Simulation Results

Predicted L50 Audible Noise Level (dBA) at Maximum Operating Voltage
Where Parallel to Existing 500 kV Transmission Line (Guyed-Delta Tower)

Structure Type	Line Voltage	Distance from Project ROW Centerline										
		-200	-100	-50	-25	0	25	50	100	200	300	400
Project: 500 kV Guyed-Delta Existing: 500 kV Guyed-Delta	550 kV 550 kV	47.3	49.6	51.1	51.7	52.0	52.0	51.9	51.7	52.8	50.2	47.8
Project: 500 kV Guyed-V Existing: 500 kV Guyed-Delta	550 kV 550 kV	46.8	49.1	50.7	51.4	51.7	51.8	51.6	51.5	52.7	50.1	47.6
Project: 500 kV Self-Supporting Existing: 500 kV Guyed-Delta	550 kV 550 kV	46.8	49.1	50.7	51.4	51.7	51.8	51.6	51.5	52.7	50.1	47.6

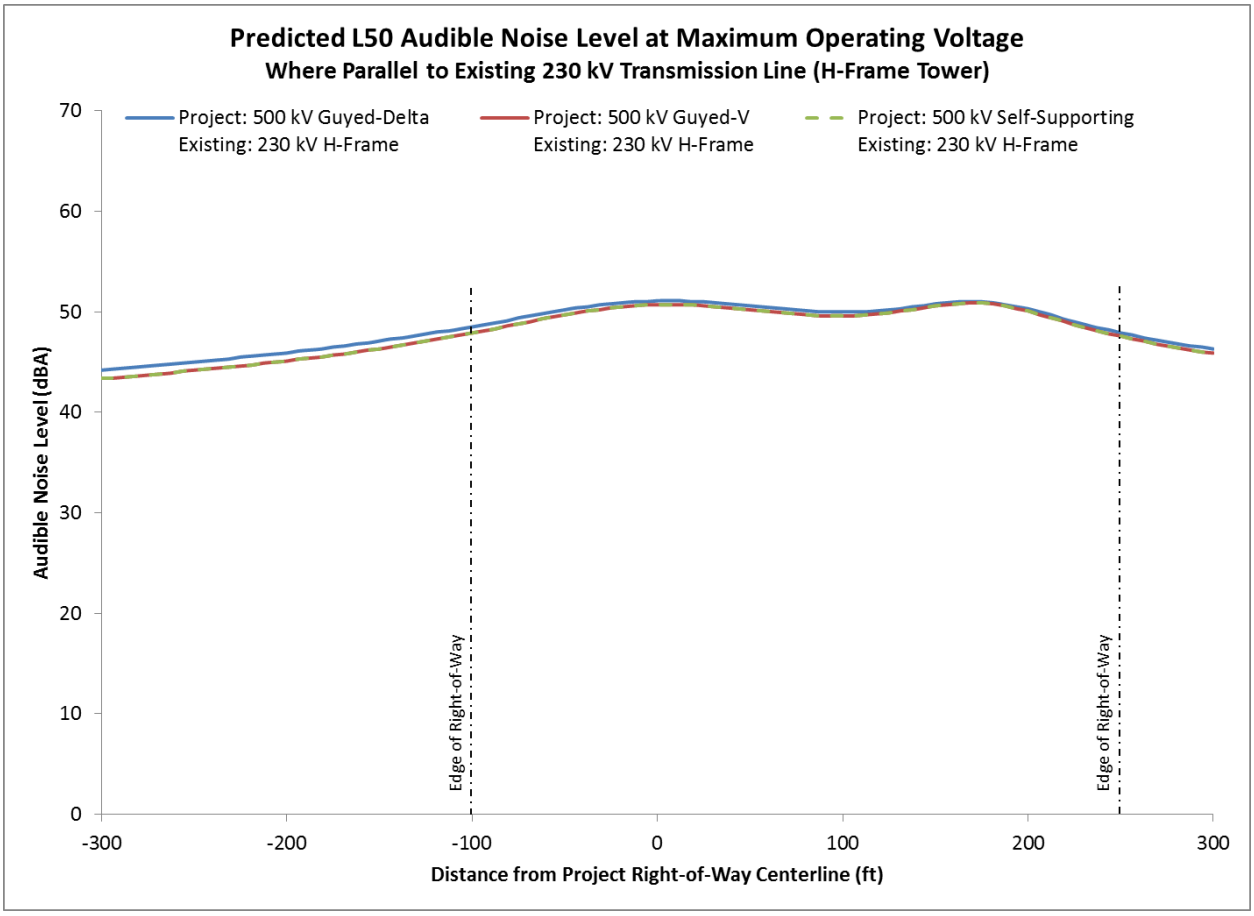


[Simulation assumes that Project ROW is adjacent to existing line ROW]

Audible Noise Simulation Results

Predicted L50 Audible Noise Level (dBA) at Maximum Operating Voltage
Where Parallel to Existing 230 kV Transmission Line (H-Frame Tower)

Structure Type	Line Voltage	Distance from Project ROW Centerline										
		-300	-200	-100	-50	-25	0	25	50	100	200	300
Project: 500 kV Guyed-Delta Existing: 230 kV H-Frame	550 kV 253 kV	44.2	45.9	48.5	50.2	50.8	51.1	51.0	50.6	50.0	50.3	46.3
Project: 500 kV Guyed-V Existing: 230 kV H-Frame	550 kV 253 kV	43.4	45.1	47.9	49.7	50.4	50.7	50.6	50.2	49.6	50.1	45.9
Project: 500 kV Self-Supporting Existing: 230 kV H-Frame	550 kV 253 kV	43.4	45.1	47.9	49.7	50.4	50.7	50.6	50.2	49.6	50.1	45.9

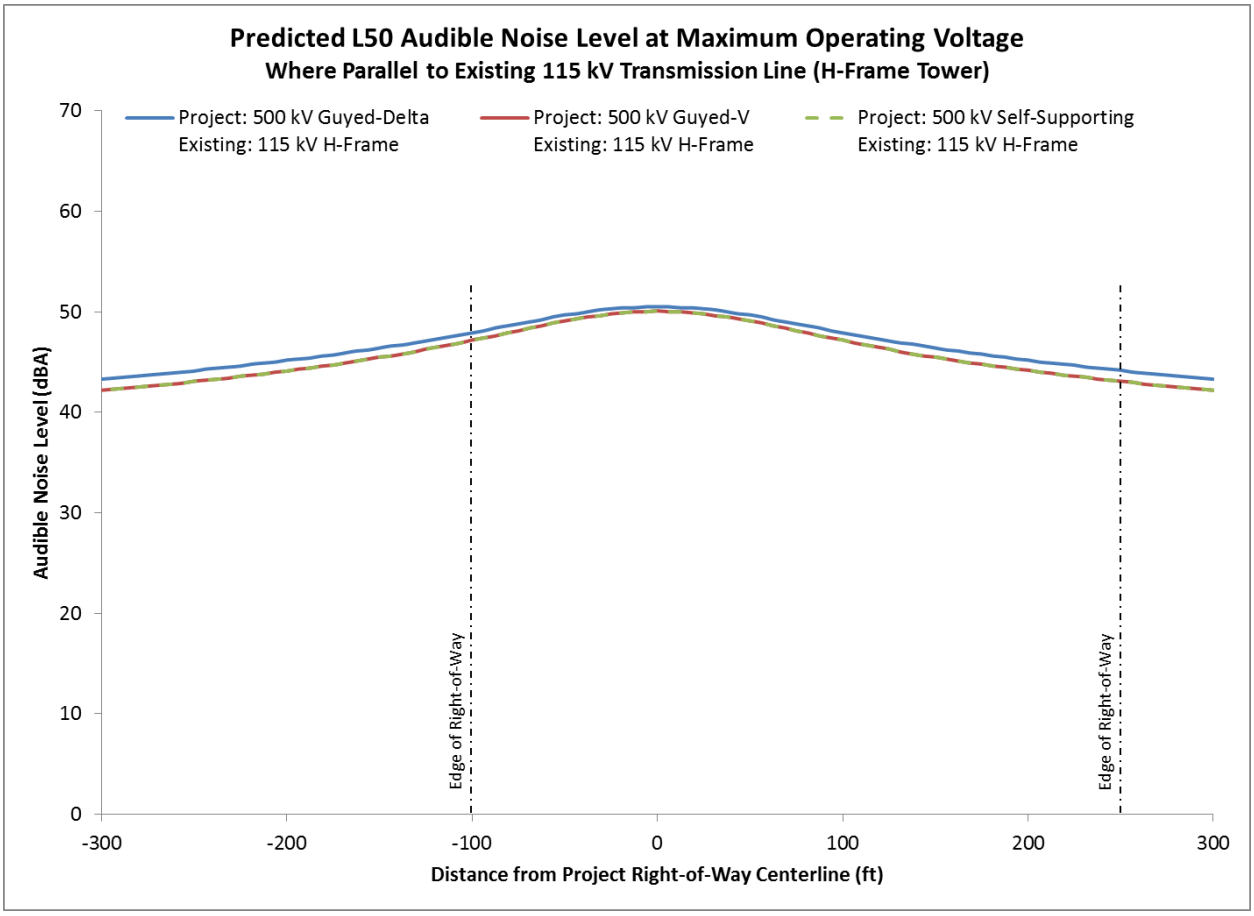


[Simulation assumes that Project ROW is adjacent to existing line ROW]

Audible Noise Simulation Results

Predicted L50 Audible Noise Level (dBA) at Maximum Operating Voltage
Where Parallel to Existing 115 kV Transmission Line (H-Frame Tower)

Structure Type	Line Voltage	Distance from Project ROW Centerline										
		-300	-200	-100	-50	-25	0	25	50	100	200	300
Project: 500 kV Guyed-Delta Existing: 115 kV H-Frame	550 kV 127 kV	43.3	45.2	47.9	49.7	50.3	50.5	50.3	49.7	47.9	45.2	43.3
Project: 500 kV Guyed-V Existing: 115 kV H-Frame	550 kV 127 kV	42.2	44.1	47.2	49.1	49.8	50.1	49.8	49.1	47.2	44.2	42.2
Project: 500 kV Self-Supporting Existing: 115 kV H-Frame	550 kV 127 kV	42.2	44.1	47.2	49.1	49.8	50.1	49.8	49.1	47.2	44.2	42.2

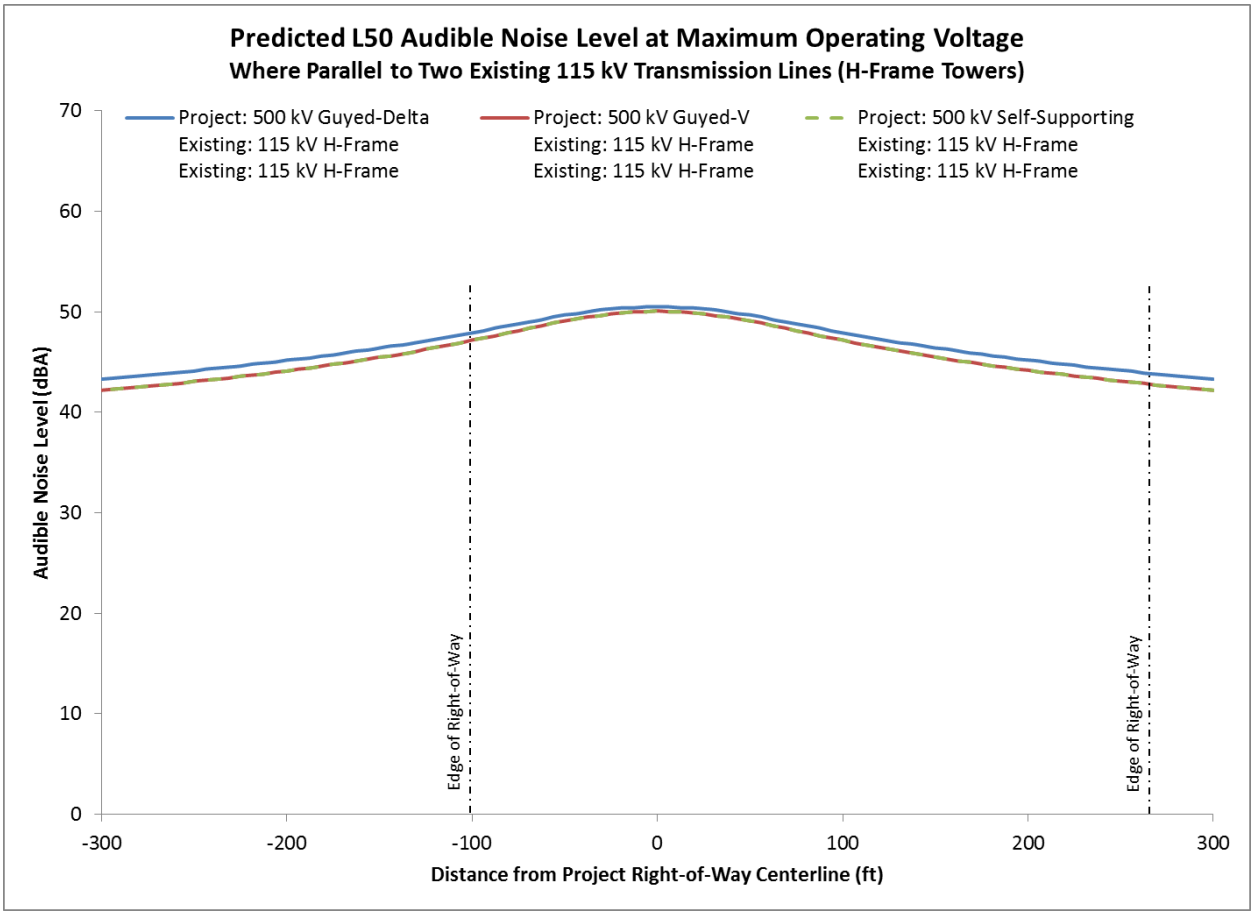


[Simulation assumes that Project ROW is adjacent to existing line ROW]

Audible Noise Simulation Results

Predicted L50 Audible Noise Level (dBA) at Maximum Operating Voltage
Where Parallel to Two Existing 115 kV Transmission Lines (H-Frame Towers)

Structure Type	Line Voltage	Distance from Project ROW Centerline										
		-300	-200	-100	-50	-25	0	25	50	100	200	300
Project: 500 kV Guyed-Delta Existing: 115 kV H-Frame Existing: 115 kV H-Frame	550 kV 127 kV 127 kV	43.3	45.2	47.9	49.7	50.3	50.5	50.3	49.7	47.9	45.2	43.3
Project: 500 kV Guyed-V Existing: 115 kV H-Frame Existing: 115 kV H-Frame	550 kV 127 kV 127 kV	42.2	44.1	47.2	49.1	49.8	50.1	49.8	49.1	47.2	44.2	42.2
Project: 500 kV Self-Supporting Existing: 115 kV H-Frame Existing: 115 kV H-Frame	550 kV 127 kV 127 kV	42.2	44.1	47.2	49.1	49.8	50.1	49.8	49.1	47.2	44.2	42.2

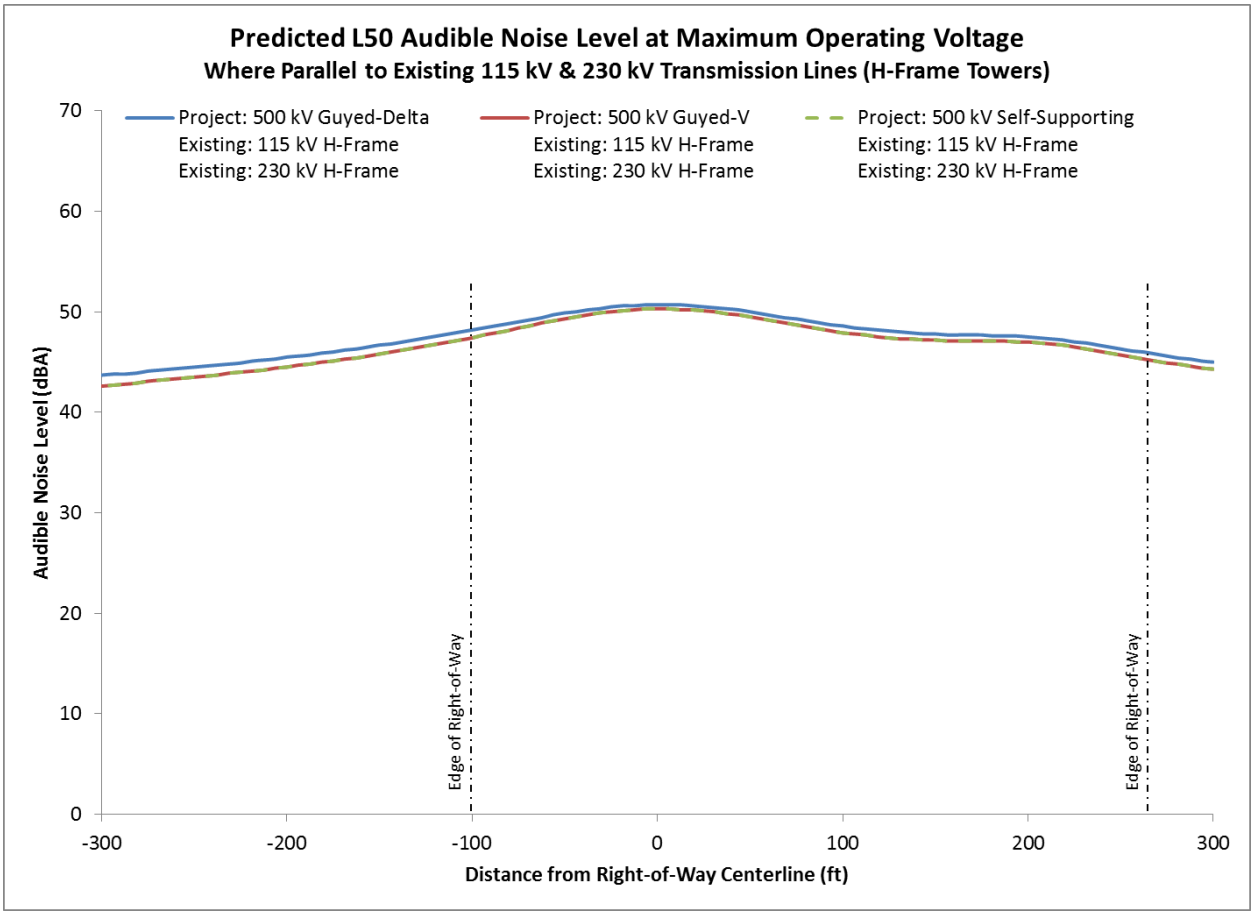


[Simulation assumes that Project ROW is adjacent to existing line ROW]

Audible Noise Simulation Results

Predicted L50 Audible Noise Level (dBA) at Maximum Operating Voltage
Where Parallel to Existing 115 kV & 230 kV Transmission Lines (H-Frame Towers)

Structure Type	Line Voltage	Distance from Project ROW Centerline										
		-300	-200	-100	-50	-25	0	25	50	100	200	300
Project: 500 kV Guyed-Delta Existing: 115 kV H-Frame Existing: 230 kV H-Frame	550 kV 127 kV 253 kV	43.7	45.5	48.2	49.9	50.5	50.7	50.5	50.0	48.6	47.5	45.0
Project: 500 kV Guyed-V Existing: 115 kV H-Frame Existing: 230 kV H-Frame	550 kV 127 kV 253 kV	42.6	44.5	47.4	49.3	50.0	50.3	50.1	49.5	47.9	47.0	44.3
Project: 500 kV Self-Supporting Existing: 115 kV H-Frame Existing: 230 kV H-Frame	550 kV 127 kV 253 kV	42.6	44.5	47.4	49.3	50.0	50.3	50.1	49.5	47.9	47.0	44.3



[Simulation assumes that Project ROW is adjacent to existing line ROW]

Electric Field Simulations Results

Predicted Intensity of Electric Fields (kV/m) at Maximum Operating Voltage
Where Not Paralleling Existing Transmission Lines

Structure Type	Line Voltage	Distance from Project ROW Centerline										
		-300	-200	-100	-50	-25	0	25	50	100	200	300
500 kV Guyed-Delta	550 kV	0.080	0.215	1.330	5.137	6.414	3.071	6.413	5.136	1.329	0.214	0.079
500 kV Guyed-V	550 kV	0.096	0.321	2.325	7.027	5.284	4.907	5.278	7.021	2.320	0.319	0.096
500 kV Self-Supporting	550 kV	0.096	0.321	2.325	7.027	5.284	4.907	5.278	7.021	2.320	0.319	0.096

Predicted Intensity of Electric Fields (kV/m) at Maximum Operating Voltage
Where Parallel to Existing 500 kV Transmission Line (Self-Supporting Tower)

Structure Type	Line Voltage	Distance from Project ROW Centerline										
		-200	-100	-50	-25	0	25	50	100	200	300	400
Project: 500 kV Guyed-Delta Existing: 500 kV Self-Supporting	550 kV 550 kV	0.228	1.359	5.170	6.457	3.100	6.290	4.819	0.838	3.803	1.732	0.249
Project: 500 kV Guyed-V Existing: 500 kV Self-Supporting	550 kV 550 kV	0.342	2.358	7.060	5.322	4.888	5.114	6.702	1.487	3.754	1.756	0.264
Project: 500 kV Self-Supporting Existing: 500 kV Self-Supporting	550 kV 550 kV	0.342	2.358	7.060	5.322	4.888	5.114	6.702	1.487	3.754	1.756	0.264

Predicted Intensity of Electric Fields (kV/m) at Maximum Operating Voltage
Where Parallel to Existing 500 kV Transmission Line (Guyed-Delta Tower)

Structure Type	Line Voltage	Distance from Project ROW Centerline										
		-200	-100	-50	-25	0	25	50	100	200	300	400
Project: 500 kV Guyed-Delta Existing: 500 kV Guyed-Delta	550 kV 550 kV	0.237	1.347	5.149	6.429	3.049	6.287	4.856	0.415	3.842	1.080	0.213
Project: 500 kV Guyed-V Existing: 500 kV Guyed-Delta	550 kV 550 kV	0.327	2.335	7.041	5.319	4.935	5.177	6.760	1.442	3.896	1.092	0.200
Project: 500 kV Self-Supporting Existing: 500 kV Guyed-Delta	550 kV 550 kV	0.327	2.335	7.041	5.319	4.935	5.177	6.760	1.442	3.896	1.092	0.200

Predicted Intensity of Electric Fields (kV/m) at Maximum Operating Voltage
Where Parallel to Existing 230 kV Transmission Line (H-Frame Tower)

Structure Type	Line Voltage	Distance from Project ROW Centerline										
		-300	-200	-100	-50	-25	0	25	50	100	200	300
Project: 500 kV Guyed-Delta Existing: 230 kV H-Frame	550 kV 253 kV	0.080	0.218	1.337	5.146	6.426	3.079	6.377	5.035	0.818	2.495	0.190
Project: 500 kV Guyed-V Existing: 230 kV H-Frame	550 kV 253 kV	0.100	0.327	2.334	7.035	5.295	4.903	5.228	6.914	1.840	2.538	0.221
Project: 500 kV Self-Supporting Existing: 230 kV H-Frame	550 kV 253 kV	0.100	0.327	2.334	7.035	5.295	4.903	5.228	6.914	1.840	2.538	0.221

Predicted Intensity of Electric Fields (kV/m) at Maximum Operating Voltage
Where Parallel to Existing 115 kV Transmission Line (H-Frame Tower)

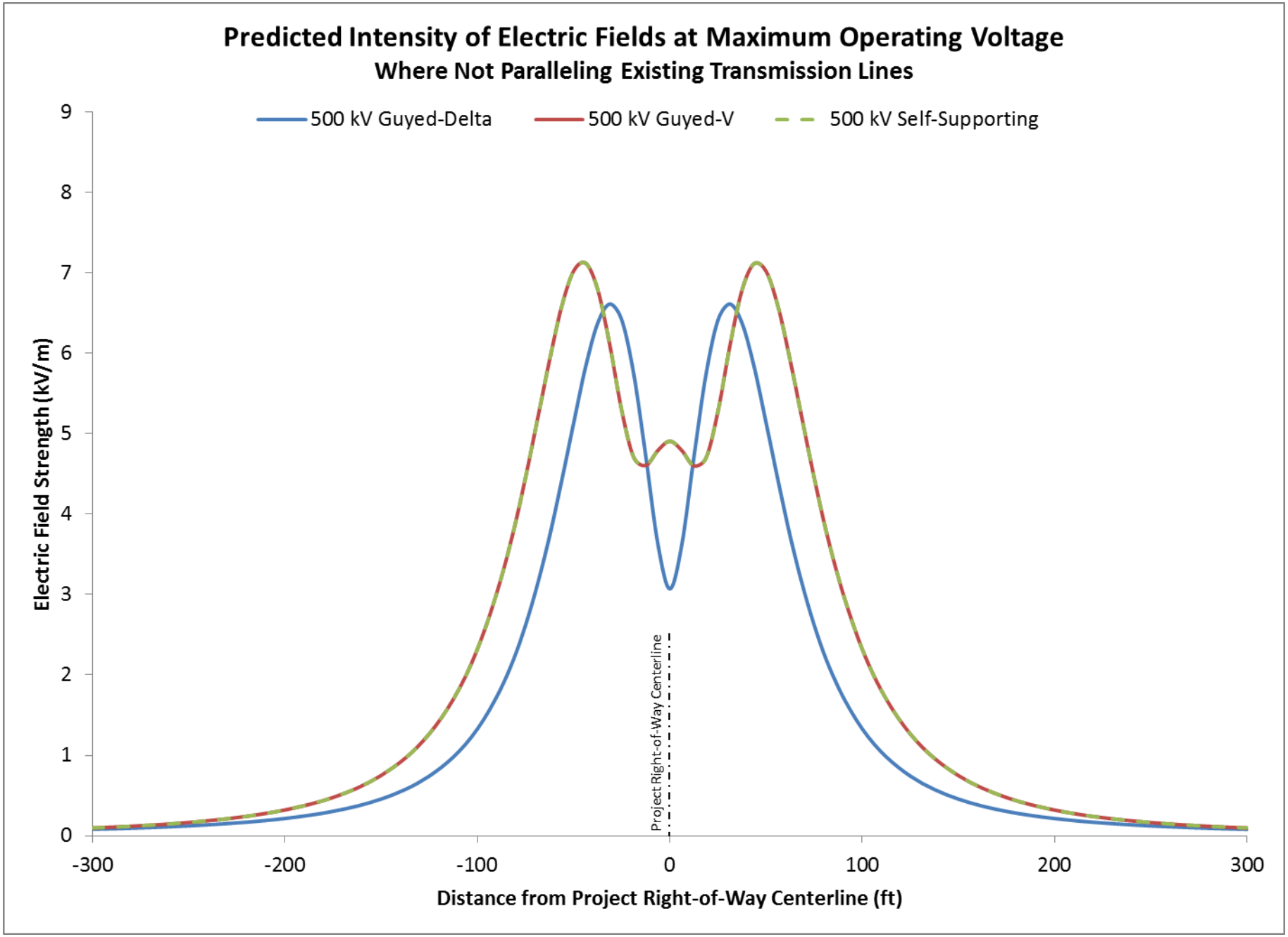
Structure Type	Line Voltage	Distance from Project ROW Centerline										
		-300	-200	-100	-50	-25	0	25	50	100	200	300
Project: 500 kV Guyed-Delta Existing: 115 kV H-Frame	550 kV 127 kV	0.079	0.214	1.329	5.136	6.413	3.073	6.421	5.152	1.388	0.359	0.029
Project: 500 kV Guyed-V Existing: 115 kV H-Frame	550 kV 127 kV	0.096	0.320	2.321	7.021	5.277	4.906	5.287	7.036	2.375	0.369	0.055
Project: 500 kV Self-Supporting Existing: 115 kV H-Frame	550 kV 127 kV	0.096	0.320	2.321	7.021	5.277	4.906	5.287	7.036	2.375	0.369	0.055

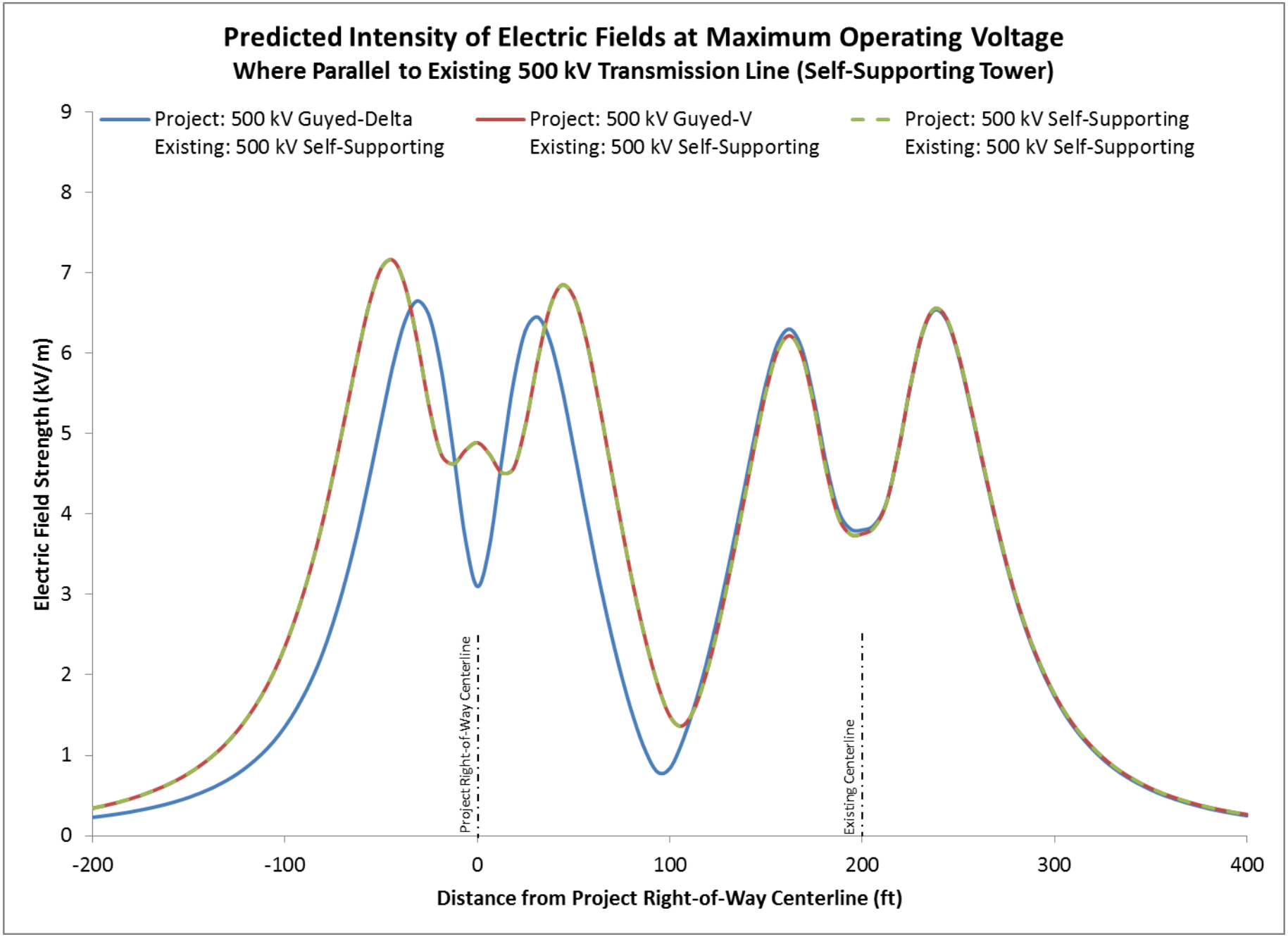
Predicted Intensity of Electric Fields (kV/m) at Maximum Operating Voltage
Where Parallel to Two Existing 115 kV Transmission Lines (H-Frame Towers)

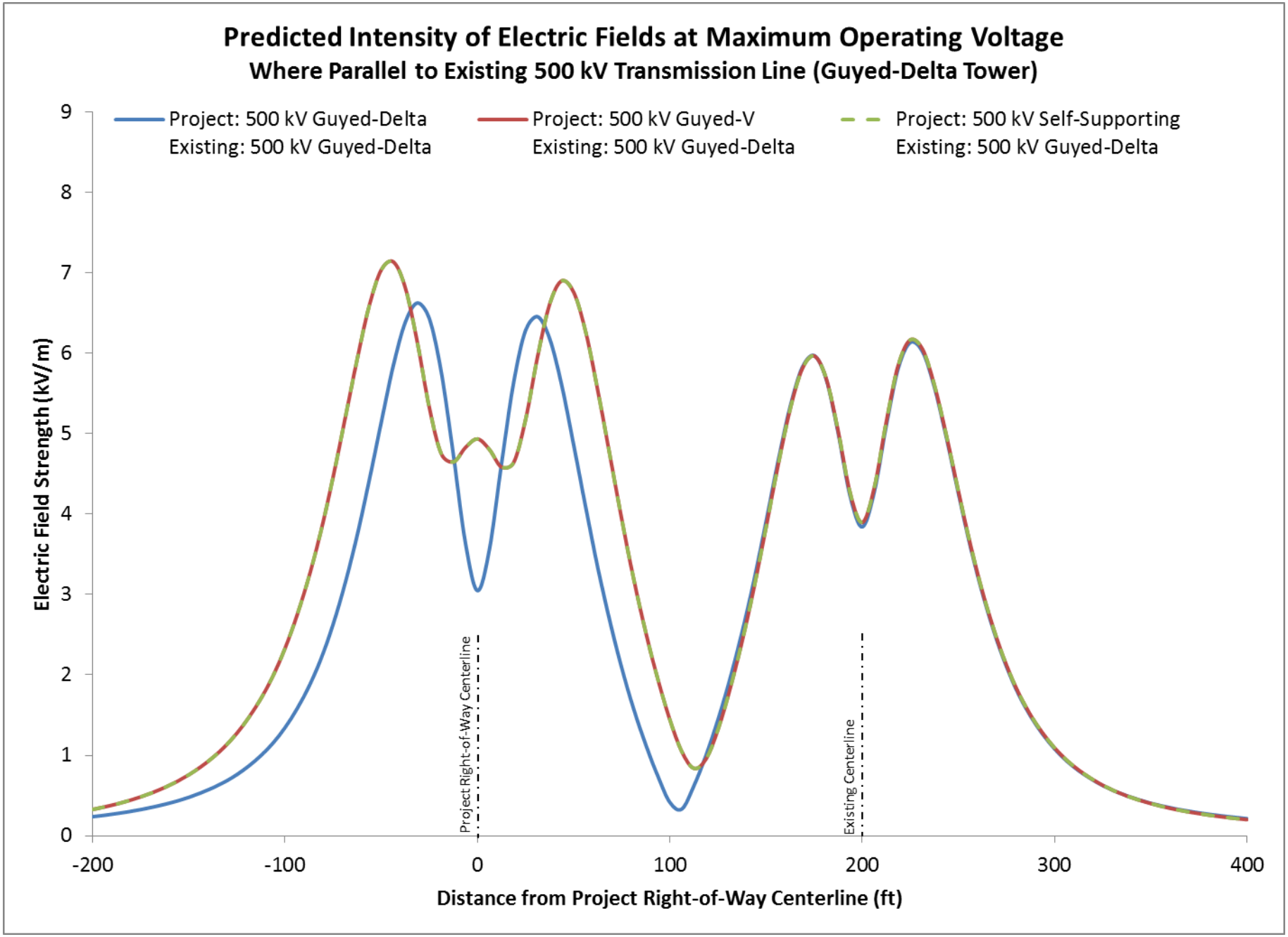
Structure Type	Line Voltage	Distance from Project ROW Centerline										
		-300	-200	-100	-50	-25	0	25	50	100	200	300
Project: 500 kV Guyed-Delta Existing: 115 kV H-Frame Existing: 115 kV H-Frame	550 kV 127 kV 127 kV	0.079	0.214	1.330	5.137	6.414	3.076	6.432	5.184	1.652	0.846	0.062
Project: 500 kV Guyed-V Existing: 115 kV H-Frame Existing: 115 kV H-Frame	550 kV 127 kV 127 kV	0.097	0.321	2.322	7.022	5.278	4.906	5.290	7.052	2.582	0.873	0.075
Project: 500 kV Self-Supporting Existing: 115 kV H-Frame Existing: 115 kV H-Frame	550 kV 127 kV 127 kV	0.097	0.321	2.322	7.022	5.278	4.906	5.290	7.052	2.582	0.873	0.075

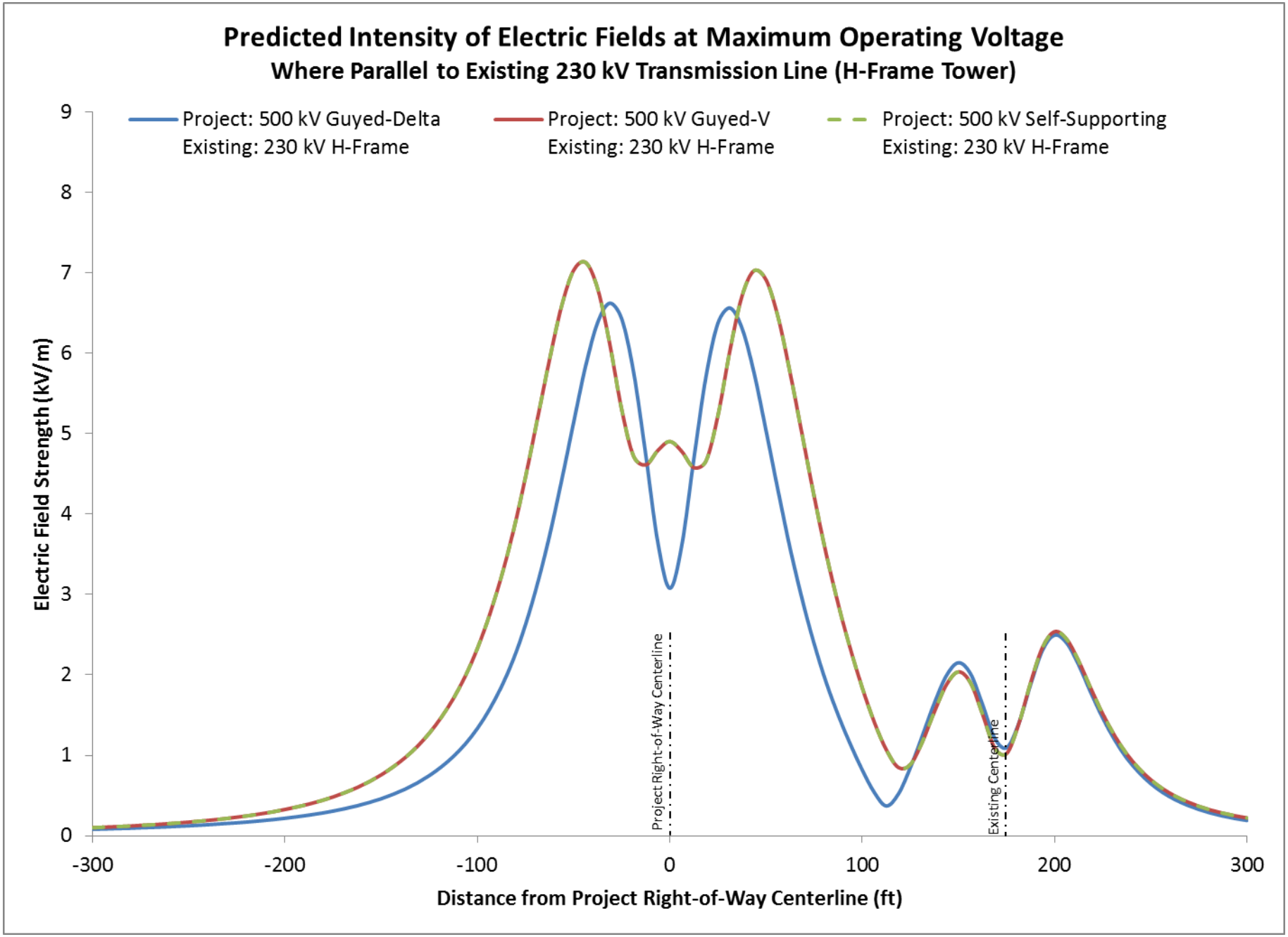
Predicted Intensity of Electric Fields (kV/m) at Maximum Operating Voltage
Where Parallel to Existing 115 kV & 230 kV Transmission Lines (H-Frame Towers)

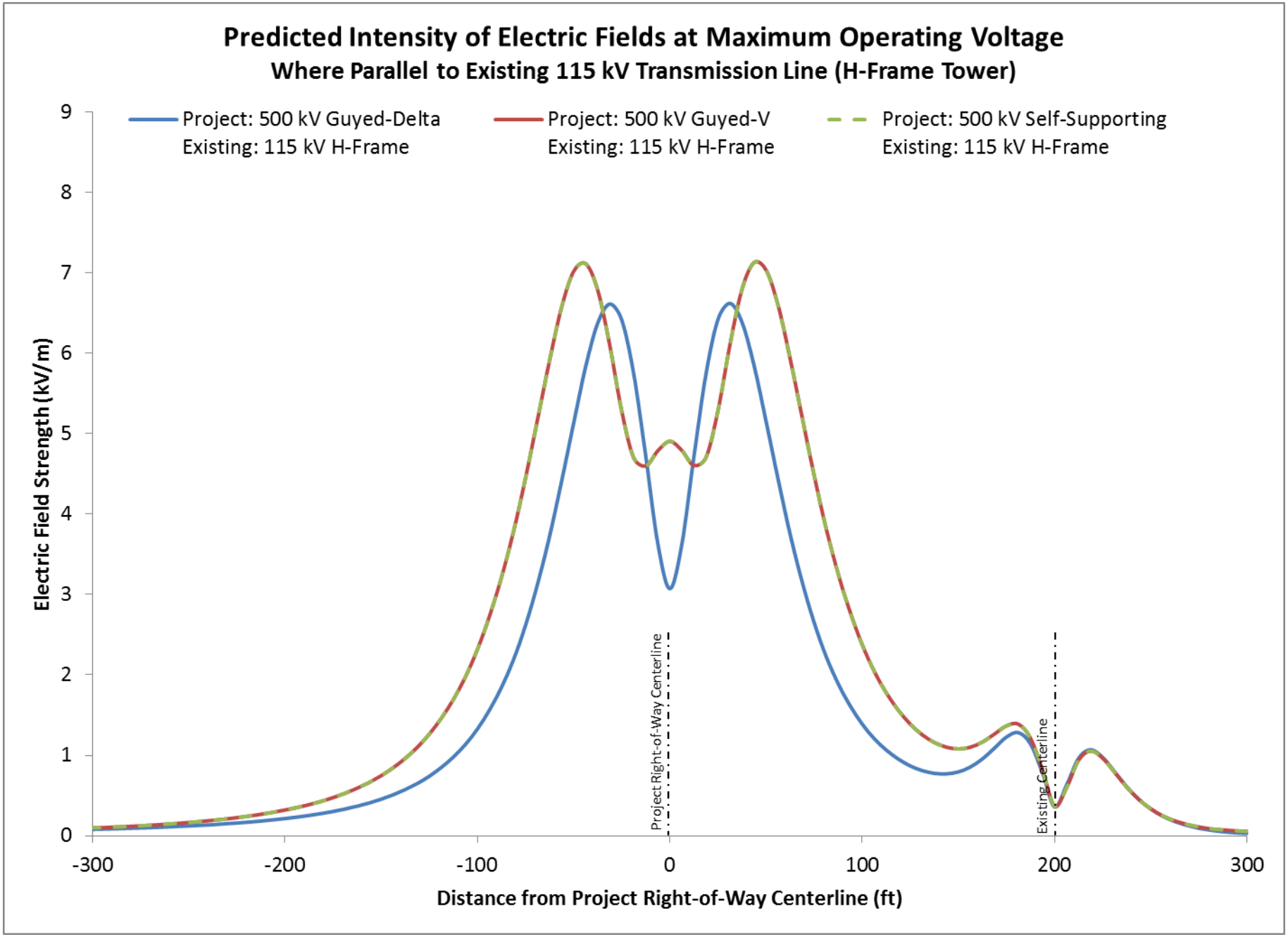
Structure Type	Line Voltage	Distance from Project ROW Centerline										
		-300	-200	-100	-50	-25	0	25	50	100	200	300
Project: 500 kV Guyed-Delta Existing: 115 kV H-Frame Existing: 230 kV H-Frame	550 kV 127 kV 253 kV	0.080	0.217	1.338	5.147	6.427	3.080	6.375	5.032	0.812	0.292	0.422
Project: 500 kV Guyed-V Existing: 115 kV H-Frame Existing: 230 kV H-Frame	550 kV 127 kV 253 kV	0.100	0.327	2.332	7.032	5.291	4.904	5.230	6.907	1.785	0.278	0.447
Project: 500 kV Self-Supporting Existing: 115 kV H-Frame Existing: 230 kV H-Frame	550 kV 127 kV 253 kV	0.100	0.327	2.332	7.032	5.291	4.904	5.230	6.907	1.785	0.278	0.447

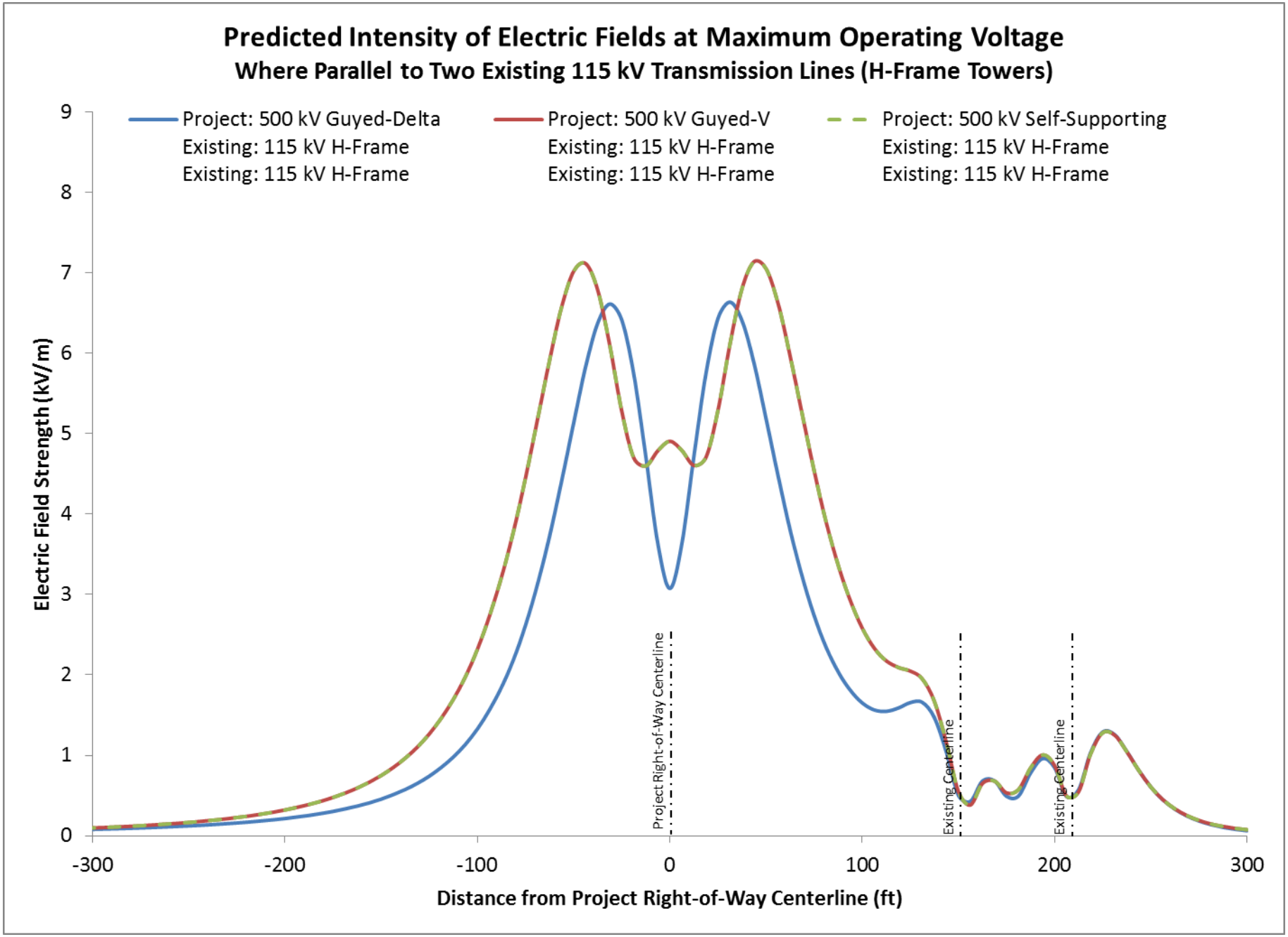

Predicted Intensity of Electric Fields at Maximum Operating Voltage
Where Not Paralleling Existing Transmission Lines
500 kV Guyed-Delta
500 kV Guyed-V
500 kV Self-Supporting
Electric Field Strength (kV/m)
0
1
2
3
4
5
6
7
8
9
-300
-200
-100
0
100
200
300
Project Right-of-Way Centerline
Distance from Project Right-of-Way Centerline (ft)

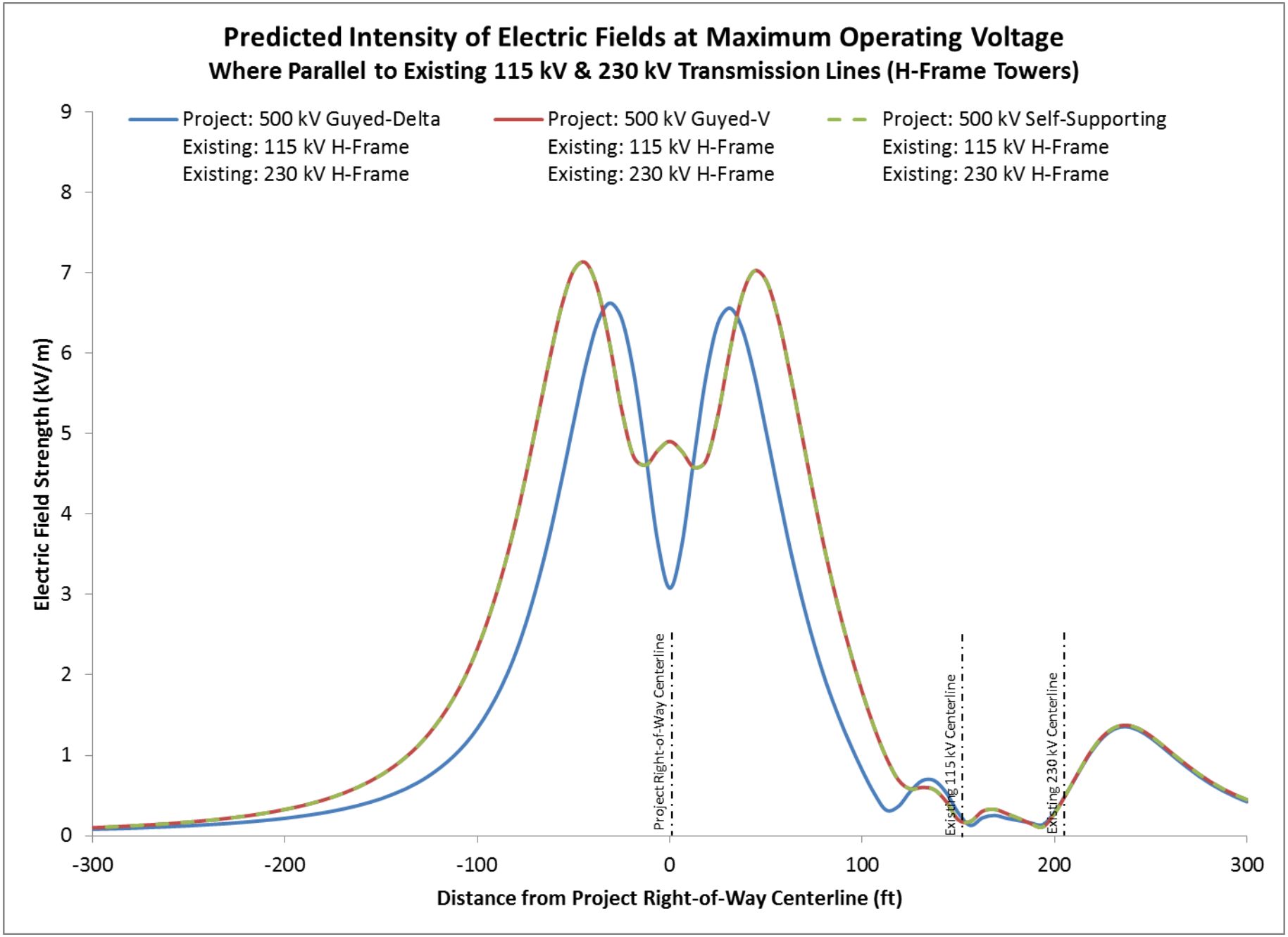

Predicted Intensity of Electric Fields at Maximum Operating Voltage
Where Parallel to Existing 500 kV Transmission Line (Self-Supporting Tower)
Project: 500 kV Guyed-Delta
Existing: 500 kV Self-Supporting
Project: 500 kV Guyed-V
Existing: 500 kV Self-Supporting
Project: 500 kV Self-Supporting
Existing: 500 kV Self-Supporting
Electric Field Strength (kV/m)
0
1
2
3
4
5
6
7
8
9
-200
-100
0
100
200
300
400
Distance from Project Right-of-Way Centerline (ft)
Project Right-of-Way Centerline
Existing Centerline


Predicted Intensity of Electric Fields at Maximum Operating Voltage
Where Parallel to Existing 500 kV Transmission Line (Guyed-Delta Tower)
Project: 500 kV Guyed-Delta
Existing: 500 kV Guyed-Delta
Project: 500 kV Guyed-V
Existing: 500 kV Guyed-Delta
Project: 500 kV Self-Supporting
Existing: 500 kV Guyed-Delta
Electric Field Strength (kV/m)
0
1
2
3
4
5
6
7
8
9
-200
-100
0
100
200
300
400
Distance from Project Right-of-Way Centerline (ft)
Project Right-of-Way Centerline
Existing Centerline


Predicted Intensity of Electric Fields at Maximum Operating Voltage
Where Parallel to Existing 230 kV Transmission Line (H-Frame Tower)
Project: 500 kV Guyed-Delta
Existing: 230 kV H-Frame
Project: 500 kV Guyed-V
Existing: 230 kV H-Frame
Project: 500 kV Self-Supporting
Existing: 230 kV H-Frame
Electric Field Strength (kV/m)
0
1
2
3
4
5
6
7
8
9
-300
-200
-100
0
100
200
300
Distance from Project Right-of-Way Centerline (ft)
Project Right-of-Way Centerline
Existing Centerline


Predicted Intensity of Electric Fields at Maximum Operating Voltage
Where Parallel to Existing 115 kV Transmission Line (H-Frame Tower)
Project: 500 kV Guyed-Delta
Existing: 115 kV H-Frame
Project: 500 kV Guyed-V
Existing: 115 kV H-Frame
Project: 500 kV Self-Supporting
Existing: 115 kV H-Frame
Electric Field Strength (kV/m)
0
1
2
3
4
5
6
7
8
9
-300
-200
-100
0
100
200
300
Distance from Project Right-of-Way Centerline (ft)
Project Right-of-Way Centerline
Existing Centerline


Predicted Intensity of Electric Fields at Maximum Operating Voltage
Where Parallel to Two Existing 115 kV Transmission Lines (H-Frame Towers)
Project: 500 kV Guyed-Delta
Existing: 115 kV H-Frame
Existing: 115 kV H-Frame
Project: 500 kV Guyed-V
Existing: 115 kV H-Frame
Existing: 115 kV H-Frame
Project: 500 kV Self-Supporting
Existing: 115 kV H-Frame
Existing: 115 kV H-Frame
Electric Field Strength (kV/m)
0
1
2
3
4
5
6
7
8
9
-300
-200
-100
0
100
200
300
Distance from Project Right-of-Way Centerline (ft)
Project Right-of-Way Centerline
Existing Centerline
Existing Centerline

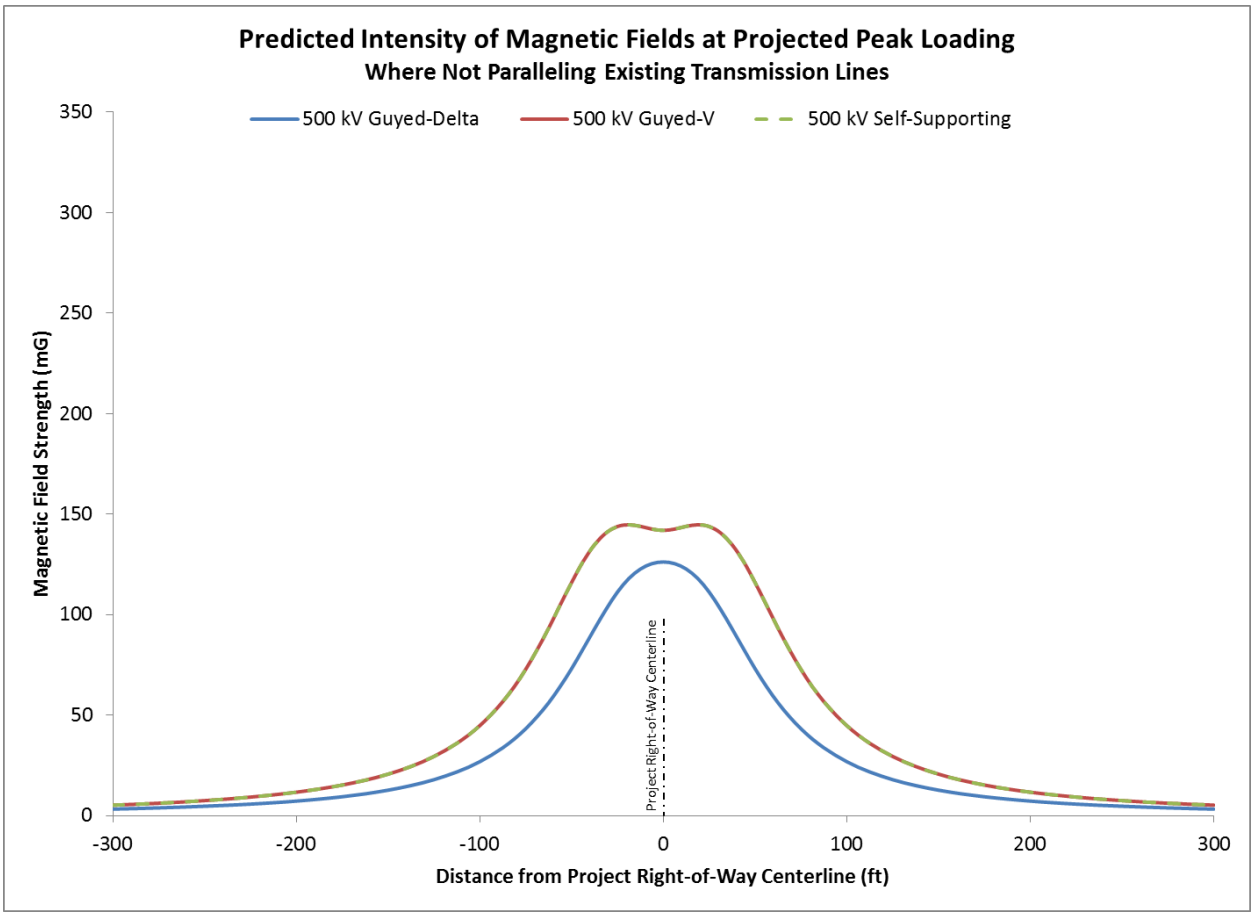

Predicted Intensity of Electric Fields at Maximum Operating Voltage
Where Parallel to Existing 115 kV & 230 kV Transmission Lines (H-Frame Towers)
Project: 500 kV Guyed-Delta
Existing: 115 kV H-Frame
Existing: 230 kV H-Frame
Project: 500 kV Guyed-V
Existing: 115 kV H-Frame
Existing: 230 kV H-Frame
Project: 500 kV Self-Supporting
Existing: 115 kV H-Frame
Existing: 230 kV H-Frame
Electric Field Strength (kV/m)
0
1
2
3
4
5
6
7
8
9
-300
-200
-100
0
100
200
300
Distance from Project Right-of-Way Centerline (ft)
Project Right-of-Way Centerline
Existing 115 kV Centerline
Existing 230 kV Centerline

Magnetic Field Simulation Results

Magnetic Field Simulation Results: Projected Peak Loading

Predicted Intensity of Magnetic Fields (mG) at Projected Peak Loading Where Not Paralleling Existing Transmission Lines

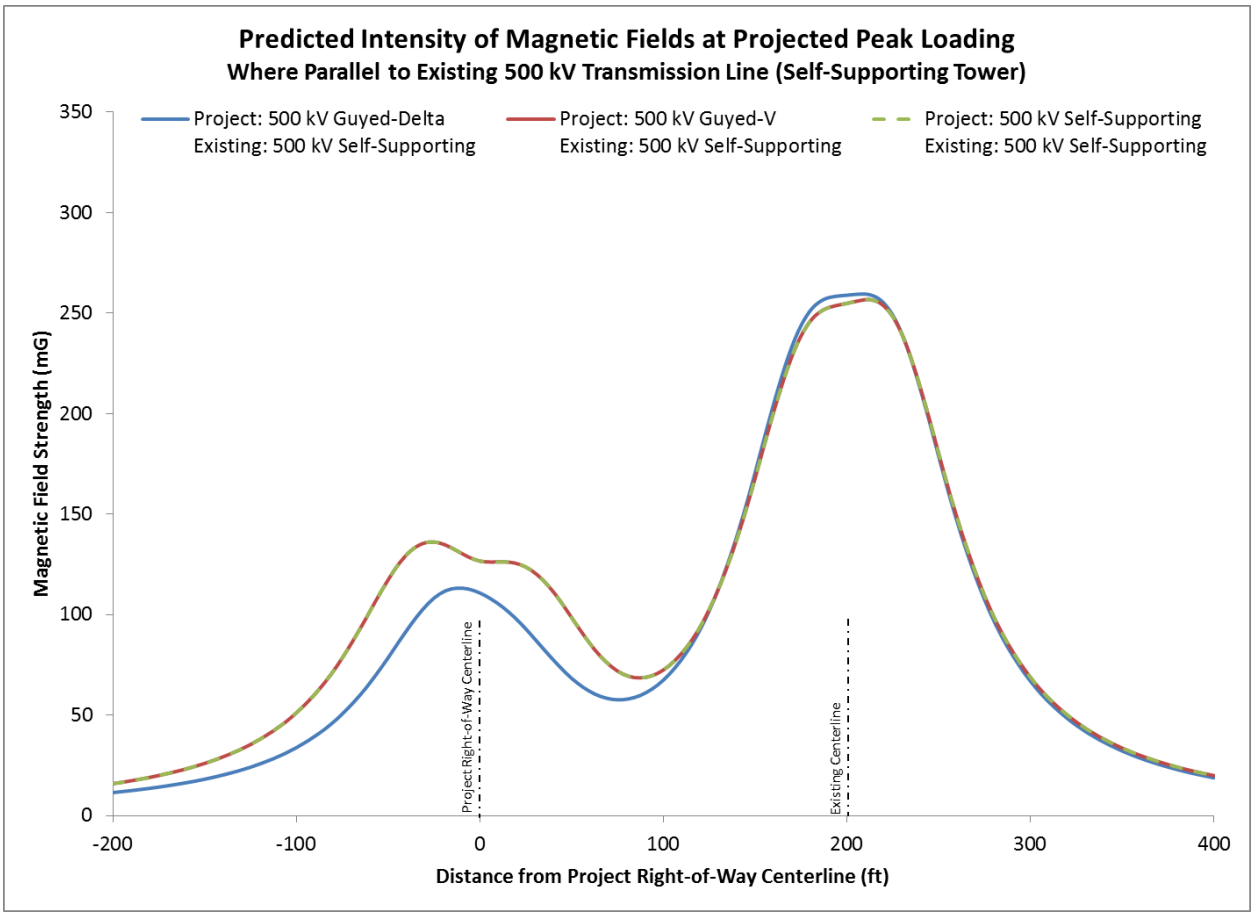
Structure Type	Line Current	Distance from Project ROW Centerline										
		-300	-200	-100	-50	-25	0	25	50	100	200	300
500 kV Guyed-Delta	1,024 A	3.2	7.2	26.8	73.1	111.2	126.2	111.2	73.1	26.8	7.2	3.2
500 kV Guyed-V	1,024 A	5.2	11.6	44.8	115.9	143.8	141.9	143.8	115.9	44.8	11.6	5.2
500 kV Self-Supporting	1,024 A	5.2	11.6	44.8	115.9	143.8	141.9	143.8	115.9	44.8	11.6	5.2



<u>Magnetic Field Simulation Results</u>: Projected Peak Loading

Predicted Intensity of Magnetic Fields (mG) at Projected Peak Loading
Where Parallel to Existing 500 kV Transmission Line (Self-Supporting Tower)

Structure Type	Line Voltage	Distance from Project ROW Centerline										
		-200	-100	-50	-25	0	25	50	100	200	300	400
Project: 500 kV Guyed-Delta Existing: 500 kV Self-Supporting	1,024 A 1,897 A	11.5	33.8	78.5	108.2	110.8	92.9	68.3	67.4	258.8	66.9	18.8
Project: 500 kV Guyed-V Existing: 500 kV Self-Supporting	1,024 A 1,897 A	15.9	51.1	117.2	136.1	126.6	123.7	98.5	72.4	254.8	68.8	19.9
Project: 500 kV Self-Supporting Existing: 500 kV Self-Supporting	1,024 A 1,897 A	15.9	51.1	117.2	136.1	126.6	123.7	98.5	72.4	254.8	68.8	19.9

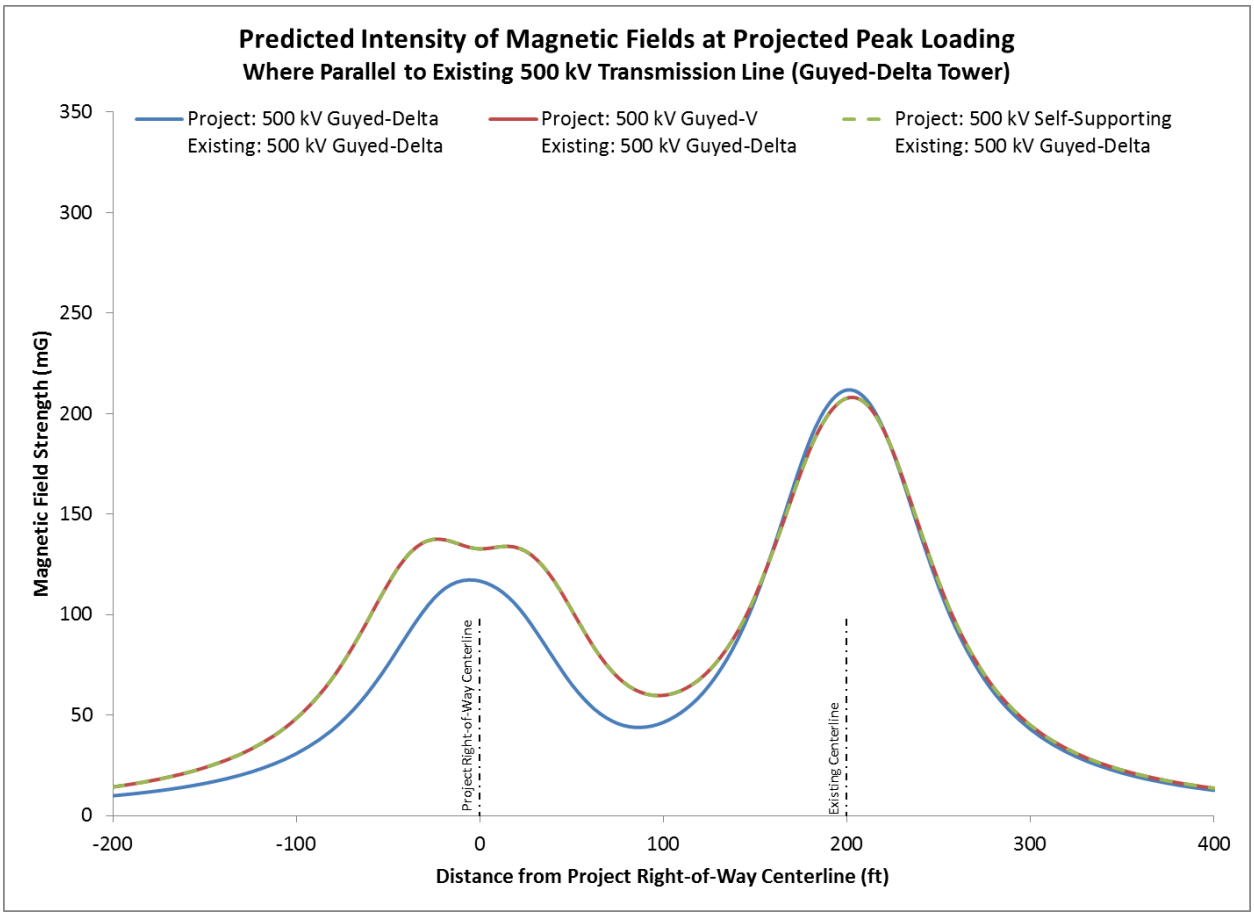


[Simulation assumes that Project ROW is adjacent to existing line ROW]

<u>Magnetic Field Simulation Results</u>: Projected Peak Loading

Predicted Intensity of Magnetic Fields (mG) at Projected Peak Loading
Where Parallel to Existing 500 kV Transmission Line (Guyed-Delta Tower)

Structure Type	Line Voltage	Distance from Project ROW Centerline										
		-200	-100	-50	-25	0	25	50	100	200	300	400
Project: 500 kV Guyed-Delta Existing: 500 kV Guyed-Delta	1,024 A 1,897 A	9.9	30.8	75.1	108.1	116.7	98.9	65.3	46.4	211.7	43.0	12.6
Project: 500 kV Guyed-V Existing: 500 kV Guyed-Delta	1,024 A 1,897 A	14.2	48.3	115.3	137.4	132.7	131.5	102.4	59.8	207.6	44.9	13.6
Project: 500 kV Self-Supporting Existing: 500 kV Guyed-Delta	1,024 A 1,897 A	14.2	48.3	115.3	137.4	132.7	131.5	102.4	59.8	207.6	44.9	13.6

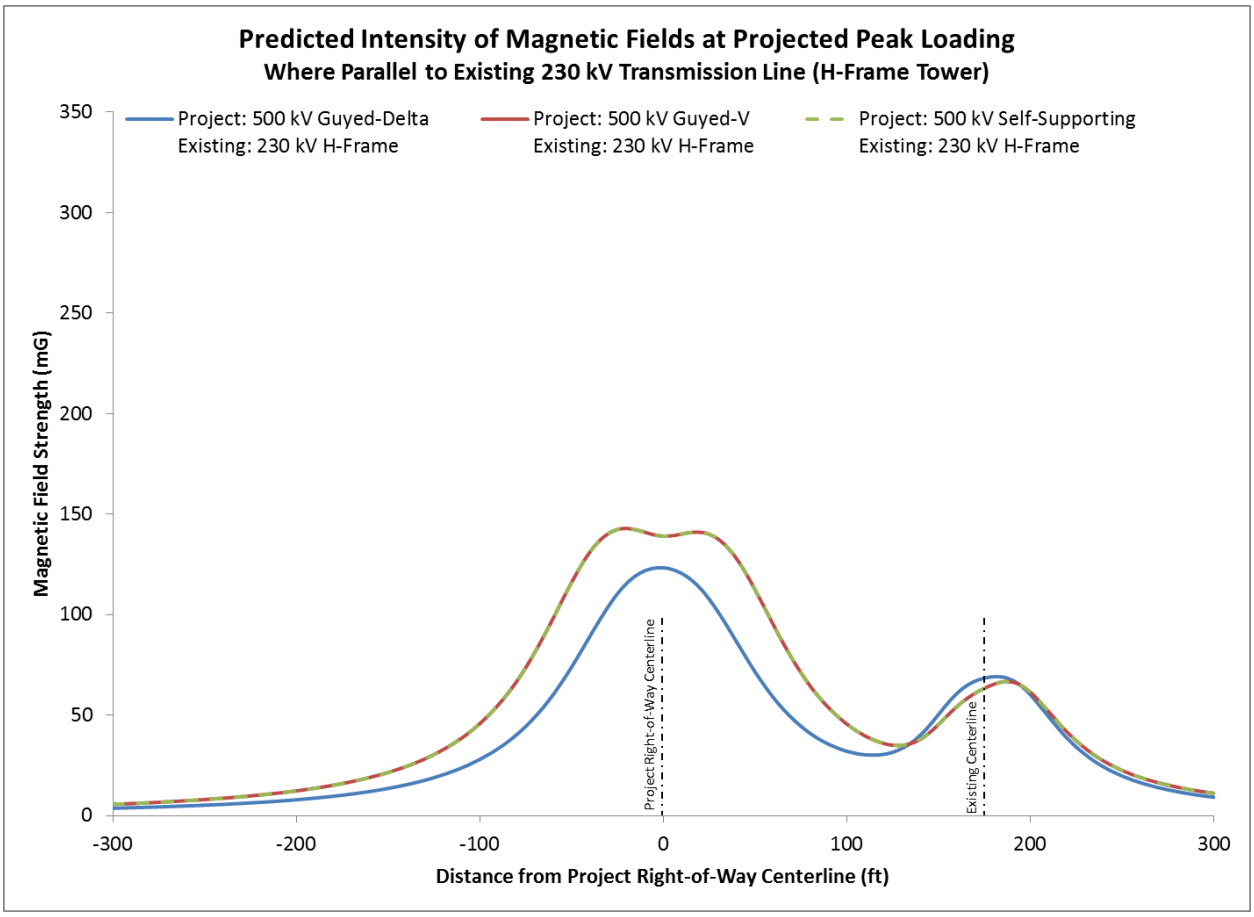


[Simulation assumes that Project ROW is adjacent to existing line ROW]

<u>Magnetic Field Simulation Results</u>: Projected Peak Loading

Predicted Intensity of Magnetic Fields (mG) at Projected Peak Loading
Where Parallel to Existing 230 kV Transmission Line (H-Frame Tower)

Structure Type	Line Voltage	Distance from Project ROW Centerline										
		-300	-200	-100	-50	-25	0	25	50	100	200	300
Project: 500 kV Guyed-Delta Existing: 230 kV H-Frame	1,024 A 434 A	3.7	7.9	27.9	73.8	110.4	123.3	107.7	71.5	32.0	60.1	9.1
Project: 500 kV Guyed-V Existing: 230 kV H-Frame	1,024 A 434 A	5.6	12.3	45.7	116.0	142.3	139.0	140.0	112.3	45.5	61.4	11.1
Project: 500 kV Self-Supporting Existing: 230 kV H-Frame	1,024 A 434 A	5.6	12.3	45.7	116.0	142.3	139.0	140.0	112.3	45.5	61.4	11.1

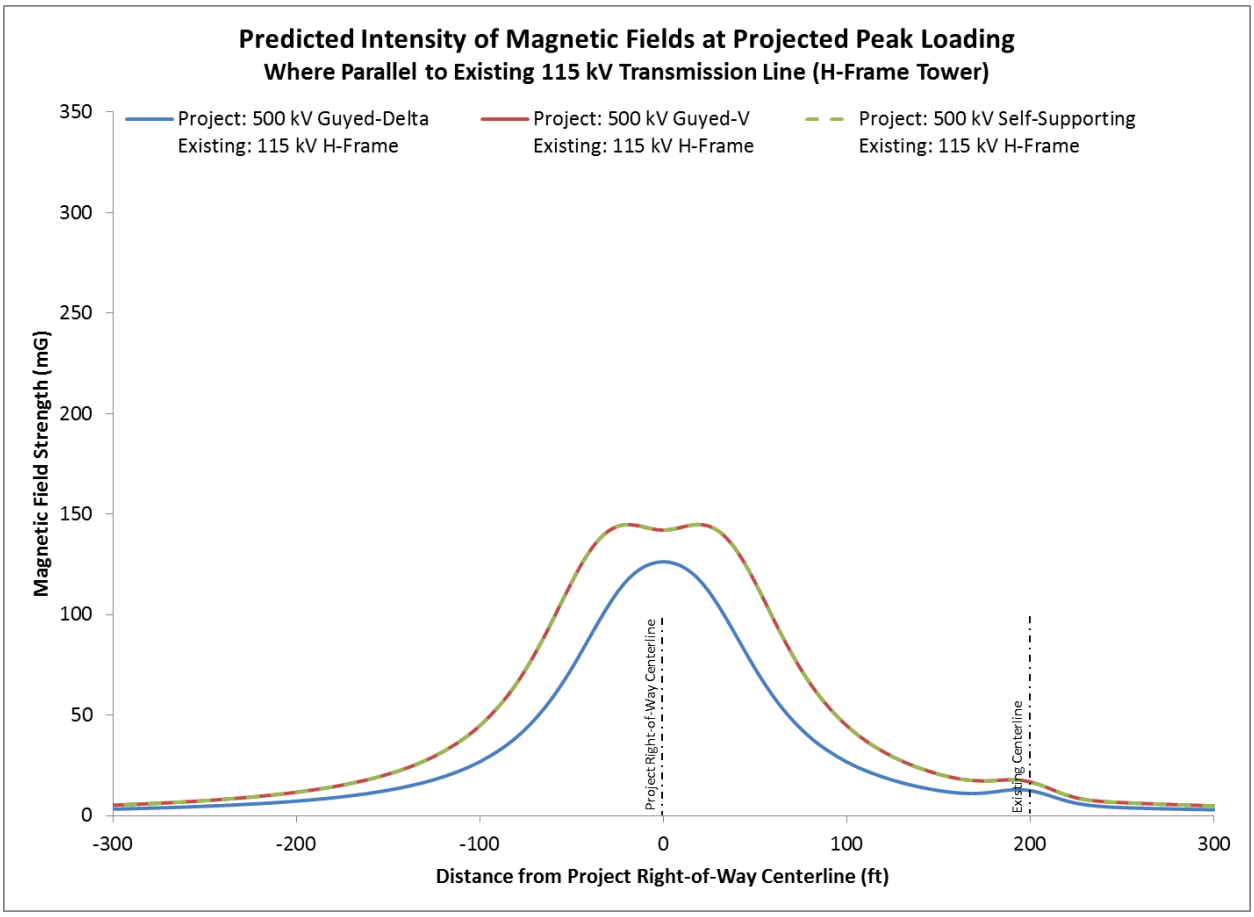


[Simulation assumes that Project ROW is adjacent to existing line ROW]

<u>Magnetic Field Simulation Results</u>: Projected Peak Loading

Predicted Intensity of Magnetic Fields (mG) at Projected Peak Loading
Where Parallel to Existing 115 kV Transmission Line (H-Frame Tower)

Structure Type	Line Voltage	Distance from Project ROW Centerline										
		-300	-200	-100	-50	-25	0	25	50	100	200	300
Project: 500 kV Guyed-Delta Existing: 115 kV H-Frame	1,024 A 32 A	3.2	7.2	26.8	73.0	111.2	126.3	111.3	73.1	26.7	12.4	2.9
Project: 500 kV Guyed-V Existing: 115 kV H-Frame	1,024 A 32 A	5.2	11.6	44.7	115.9	143.9	142.0	143.9	116.0	44.7	16.7	4.8
Project: 500 kV Self-Supporting Existing: 115 kV H-Frame	1,024 A 32 A	5.2	11.6	44.7	115.9	143.9	142.0	143.9	116.0	44.7	16.7	4.8

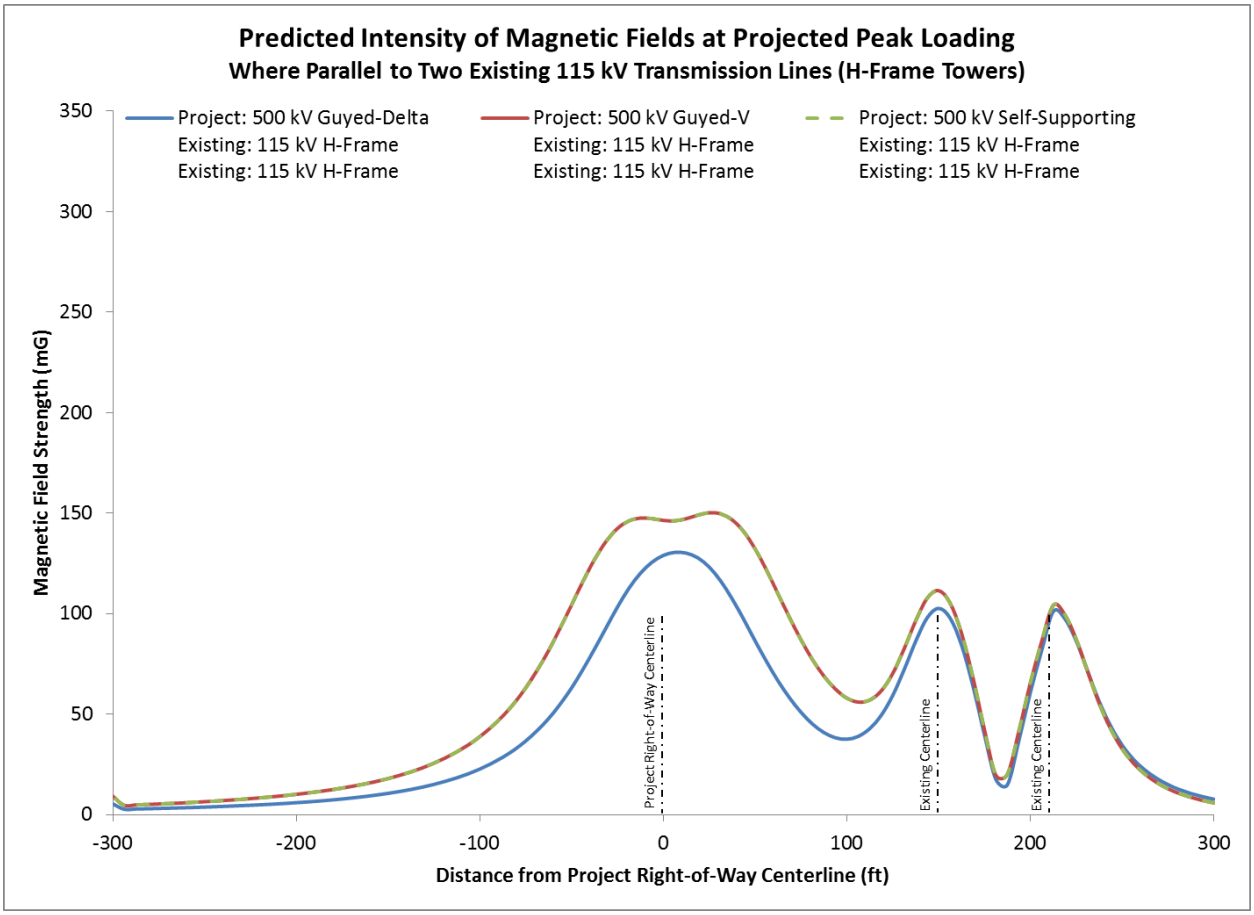


[Simulation assumes that Project ROW is adjacent to existing line ROW]

Magnetic Field Simulation Results: Projected Peak Loading

Predicted Intensity of Magnetic Fields (mG) at Projected Peak Loading
Where Parallel to Two Existing 115 kV Transmission Lines (H-Frame Towers)

Structure Type	Line Voltage	Distance from Project ROW Centerline										
		-300	-200	-100	-50	-25	0	25	50	100	200	300
Project: 500 kV Guyed-Delta Existing: 115 kV H-Frame Existing: 115 kV H-Frame	1,024 A 536 A 536 A	5.3	5.9	22.6	63.0	103.2	128.9	123.1	86.4	37.5	60.7	7.7
Project: 500 kV Guyed-V Existing: 115 kV H-Frame Existing: 115 kV H-Frame	1,024 A 536 A 536 A	9.1	10.1	38.8	104.3	142.3	146.4	150.1	132.2	58.0	65.4	5.8
Project: 500 kV Self-Supporting Existing: 115 kV H-Frame Existing: 115 kV H-Frame	1,024 A 536 A 536 A	9.1	10.1	38.8	104.3	142.3	146.4	150.1	132.2	58.0	65.4	5.8

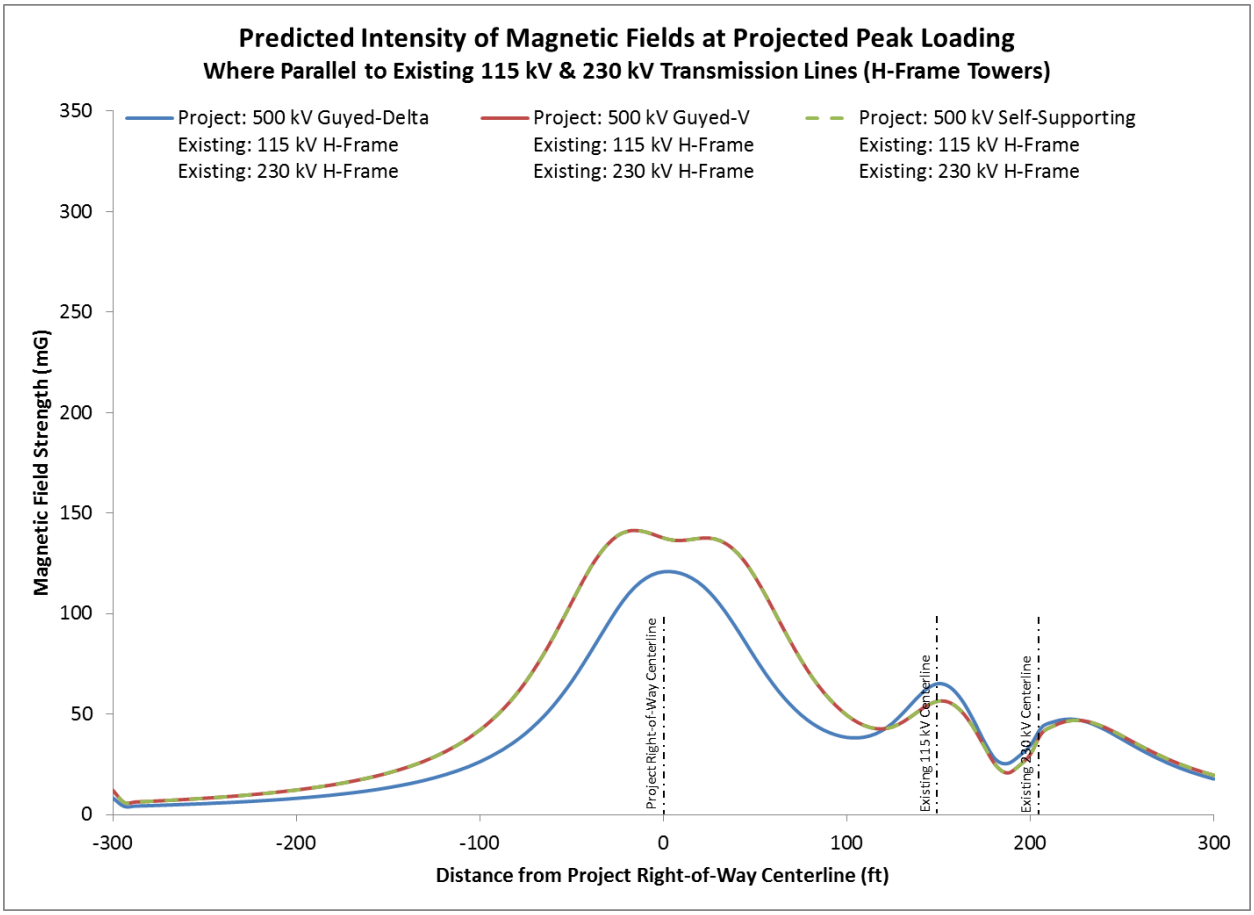


[Simulation assumes that Project ROW is adjacent to existing line ROW]

Magnetic Field Simulation Results: Projected Peak Loading

Predicted Intensity of Magnetic Fields (mG) at Projected Peak Loading
Where Parallel to Existing 115 kV & 230 kV Transmission Lines (H-Frame Towers)

Structure Type	Line Voltage	Distance from Project ROW Centerline										
		-300	-200	-100	-50	-25	0	25	50	100	200	300
Project: 500 kV Guyed-Delta Existing: 115 kV H-Frame Existing: 230 kV H-Frame	1,024 A 557 A 601 A	8.3	8.1	26.3	66.1	102.4	120.8	110.8	77.9	38.4	34.4	17.7
Project: 500 kV Guyed-V Existing: 115 kV H-Frame Existing: 230 kV H-Frame	1,024 A 557 A 601 A	12.1	12.2	42.0	105.5	138.7	137.6	137.6	118.2	49.5	30.0	19.6
Project: 500 kV Self-Supporting Existing: 115 kV H-Frame Existing: 230 kV H-Frame	1,024 A 557 A 601 A	12.1	12.2	42.0	105.5	138.7	137.6	137.6	118.2	49.5	30.0	19.6

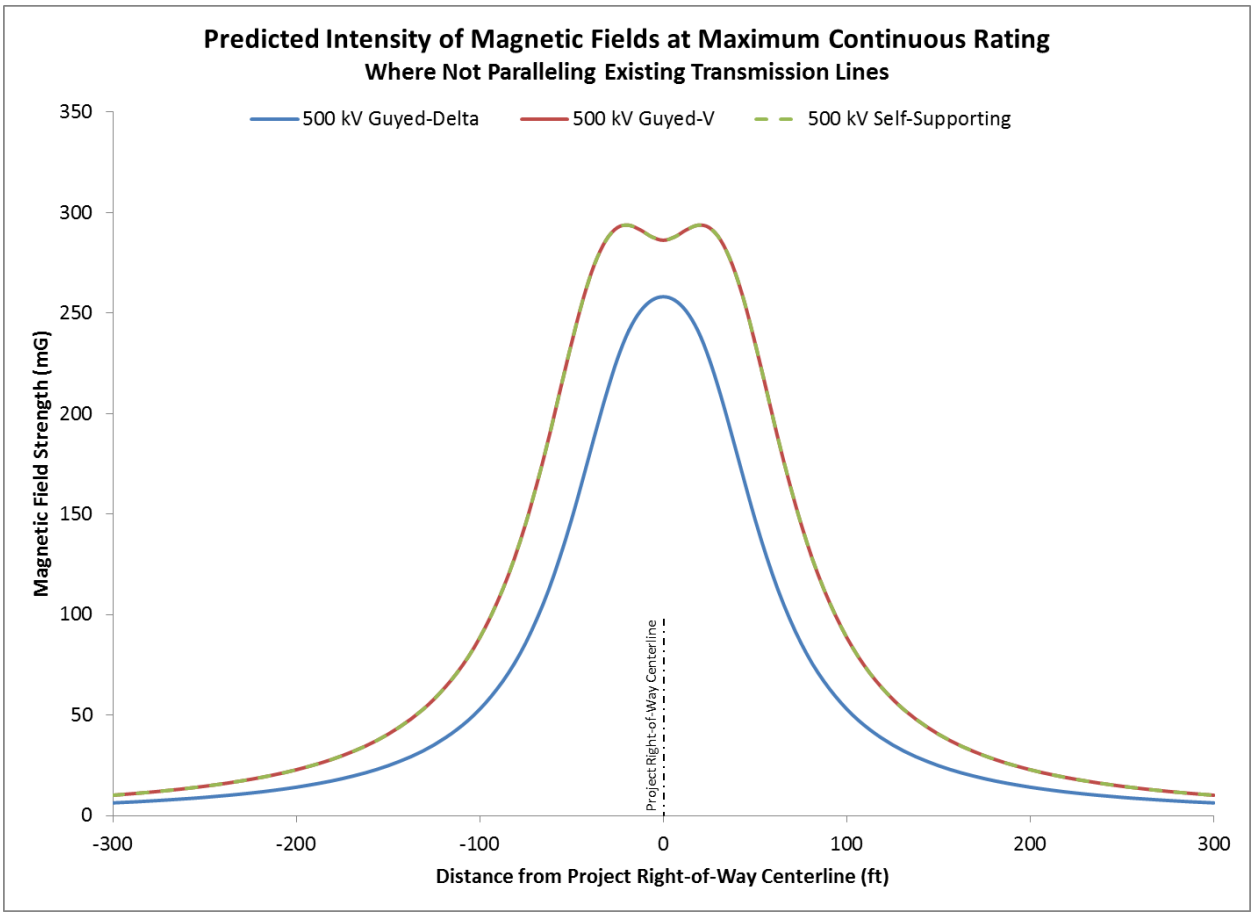


[Simulation assumes that Project ROW is adjacent to existing line ROW]

Magnetic Field Simulation Results: Max Continuous Rating

Predicted Intensity of Magnetic Fields (mG) at Maximum Continuous Rating
Where Not Paralleling Existing Transmission Lines

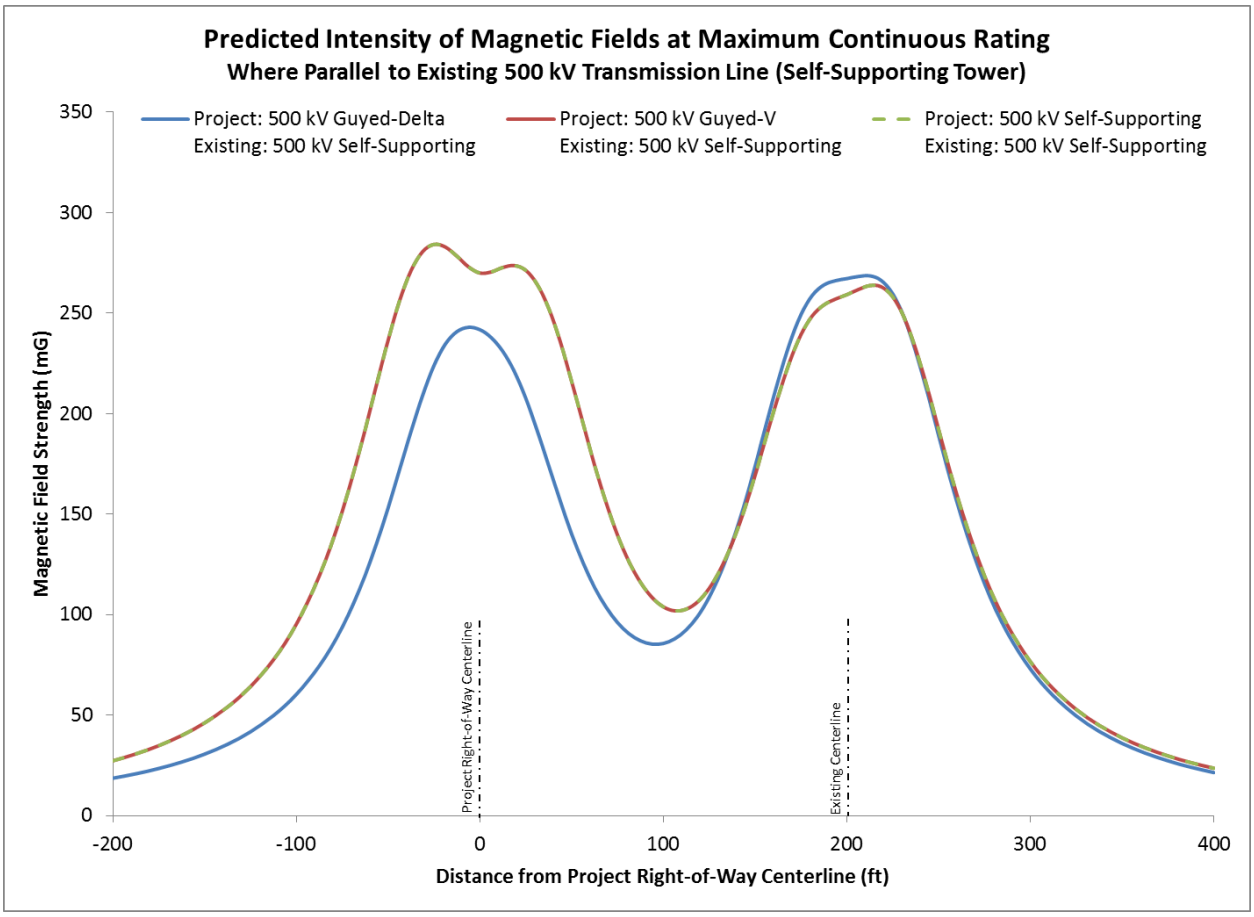
Structure Type	Line Current	Distance from Project ROW Centerline										
		-300	-200	-100	-50	-25	0	25	50	100	200	300
500 kV Guyed-Delta	2,000 A	6.3	14.1	52.9	147.3	227.2	258.1	227.2	147.3	52.9	14.1	6.3
500 kV Guyed-V	2,000 A	10.1	22.8	88.5	235.0	292.5	286.2	292.5	235.0	88.5	22.8	10.1
500 kV Self-Supporting	2,000 A	10.1	22.8	88.5	235.0	292.5	286.2	292.5	235.0	88.5	22.8	10.1



<u>Magnetic Field Simulation Results</u>: Max Continuous Rating

Predicted Intensity of Magnetic Fields (mG) at Maximum Continuous Rating
Where Parallel to Existing 500 kV Transmission Line (Self-Supporting Tower)

Structure Type	Line Voltage	Distance from Project ROW Centerline										
		-200	-100	-50	-25	0	25	50	100	200	300	400
Project: 500 kV Guyed-Delta Existing: 500 kV Self-Supporting	2,000 A 2,000 A	18.6	60.3	153.0	223.8	241.7	207.7	140.2	85.6	267.1	72.9	21.4
Project: 500 kV Guyed-V Existing: 500 kV Self-Supporting	2,000 A 2,000 A	27.3	95.2	236.4	284.1	269.9	271.3	216.1	103.9	259.1	76.6	23.6
Project: 500 kV Self-Supporting Existing: 500 kV Self-Supporting	2,000 A 2,000 A	27.3	95.2	236.4	284.1	269.9	271.3	216.1	103.9	259.1	76.6	23.6

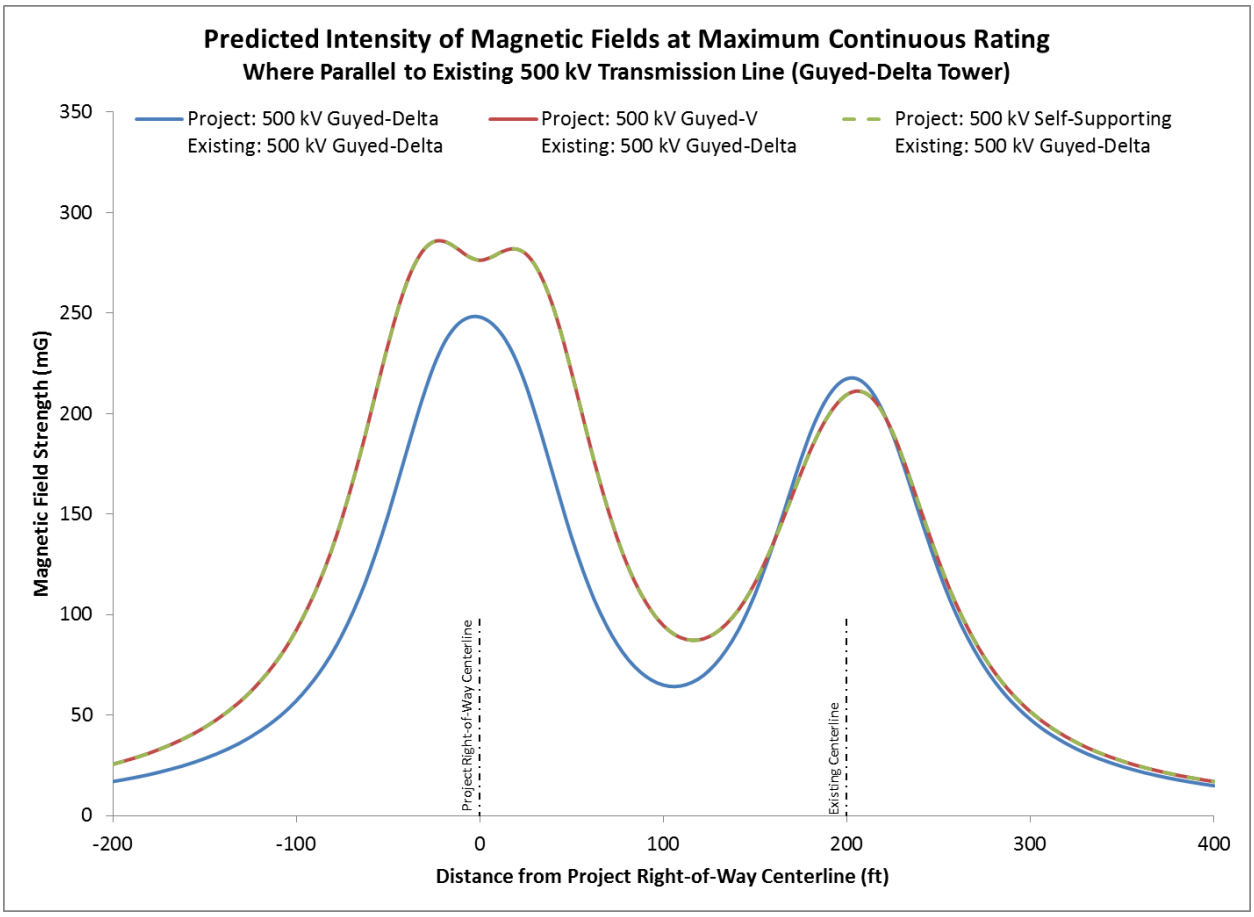


[Simulation assumes that Project ROW is adjacent to existing line ROW]

Magnetic Field Simulation Results: Max Continuous Rating

Predicted Intensity of Magnetic Fields (mG) at Maximum Continuous Rating Where Parallel to Existing 500 kV Transmission Line (Guyed-Delta Tower)

Structure Type	Line Voltage	Distance from Project ROW Centerline										
		-200	-100	-50	-25	0	25	50	100	200	300	400
Project: 500 kV Guyed-Delta Existing: 500 kV Guyed-Delta	2,000 A 2,000 A	16.9	57.2	149.4	223.8	248.0	214.3	138.5	64.9	217.3	47.9	14.9
Project: 500 kV Guyed-V Existing: 500 kV Guyed-Delta	2,000 A 2,000 A	25.5	92.3	234.2	285.5	276.2	279.5	220.5	94.6	209.4	51.7	16.9
Project: 500 kV Self-Supporting Existing: 500 kV Guyed-Delta	2,000 A 2,000 A	25.5	92.3	234.2	285.5	276.2	279.5	220.5	94.6	209.4	51.7	16.9

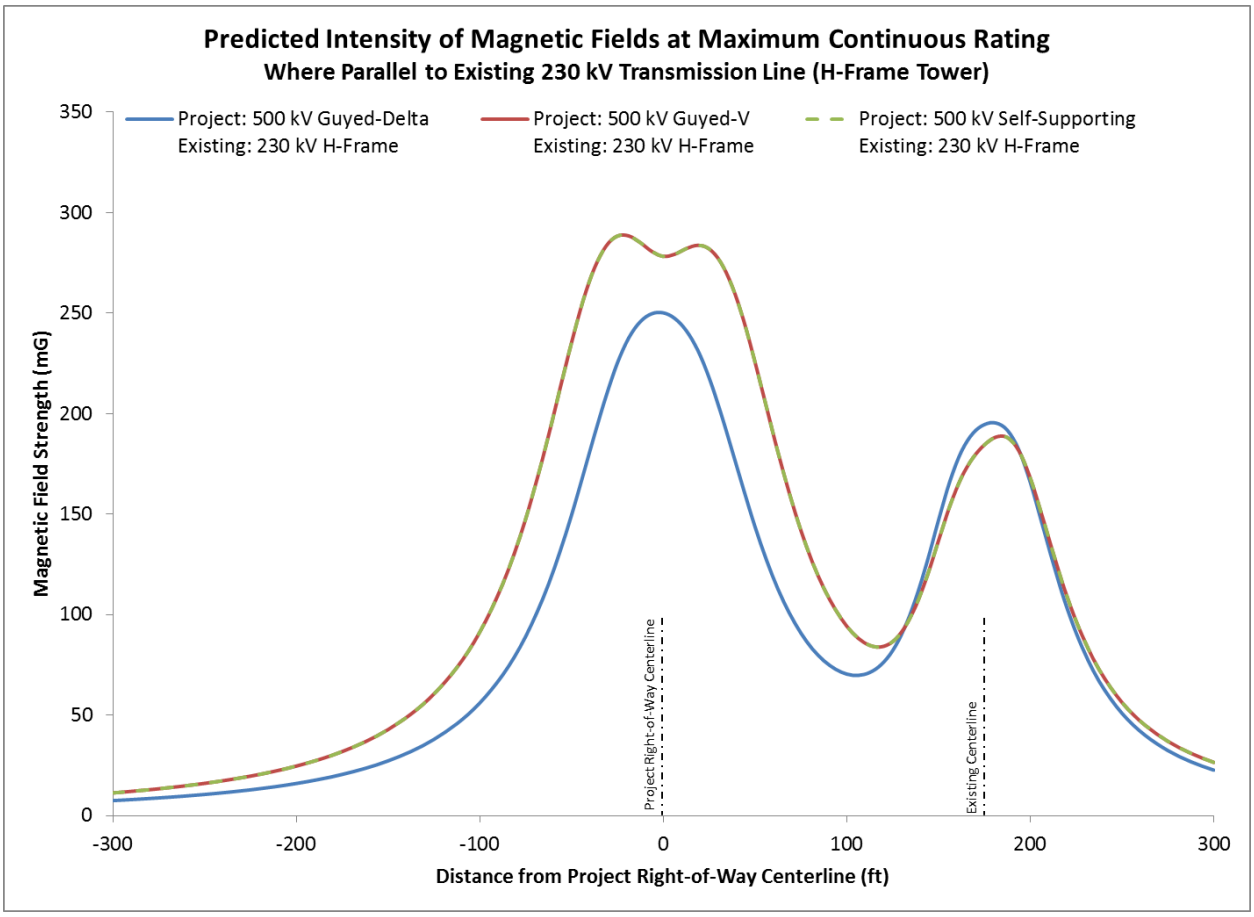


[Simulation assumes that Project ROW is adjacent to existing line ROW]

<u>Magnetic Field Simulation Results</u>: Max Continuous Rating

Predicted Intensity of Magnetic Fields (mG) at Maximum Continuous Rating
Where Parallel to Existing 230 kV Transmission Line (H-Frame Tower)

Structure Type	Line Voltage	Distance from Project ROW Centerline										
		-300	-200	-100	-50	-25	0	25	50	100	200	300
Project: 500 kV Guyed-Delta Existing: 230 kV H-Frame	2,000 A 1,198 A	7.5	16.0	56.0	149.5	225.2	250.1	217.7	143.6	70.4	165.7	22.6
Project: 500 kV Guyed-V Existing: 230 kV H-Frame	2,000 A 1,198 A	11.3	24.6	91.3	235.3	288.3	278.2	281.9	225.4	94.2	167.9	26.5
Project: 500 kV Self-Supporting Existing: 230 kV H-Frame	2,000 A 1,198 A	11.3	24.6	91.3	235.3	288.3	278.2	281.9	225.4	94.2	167.9	26.5

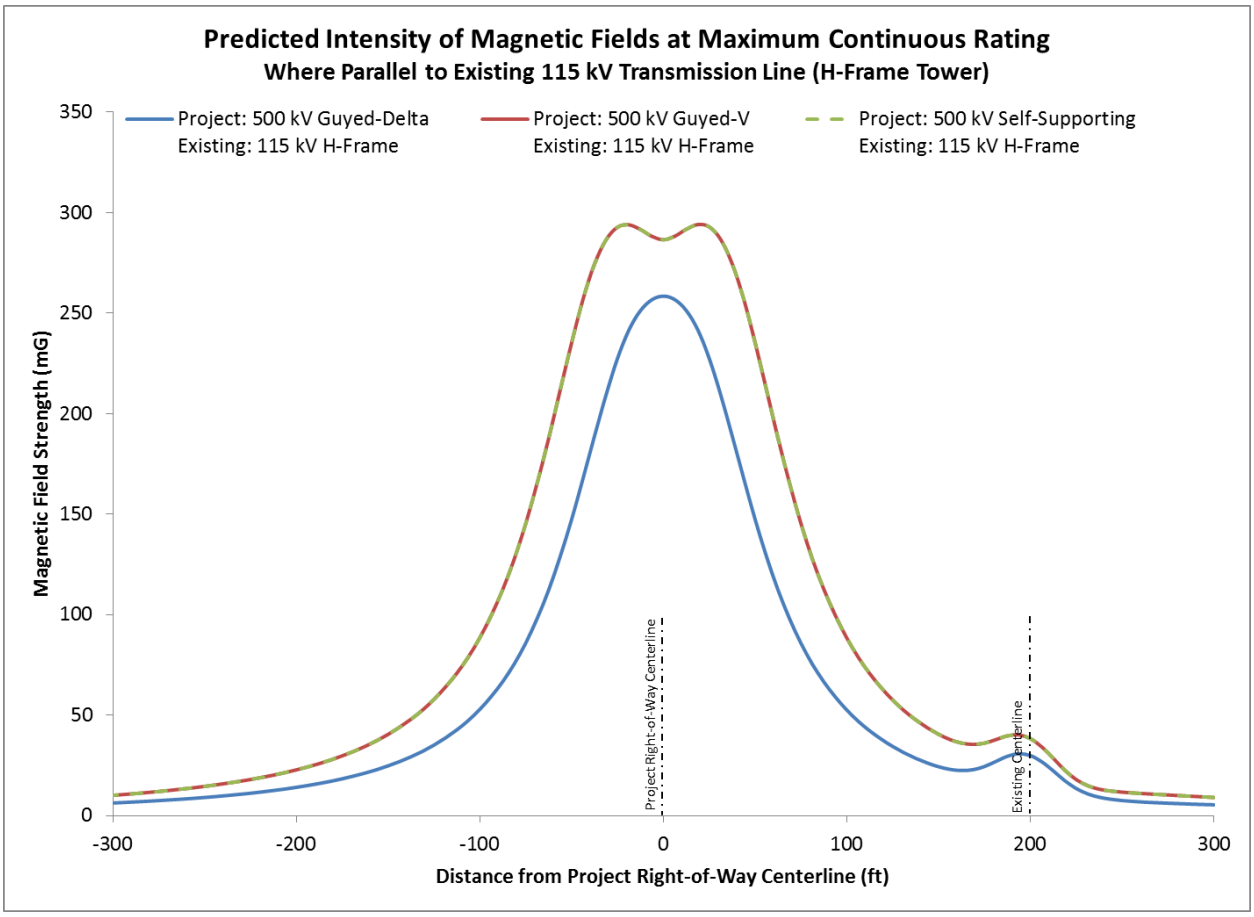


[Simulation assumes that Project ROW is adjacent to existing line ROW]

<u>Magnetic Field Simulation Results</u>: Max Continuous Rating

Predicted Intensity of Magnetic Fields (mG) at Maximum Continuous Rating
Where Parallel to Existing 115 kV Transmission Line (H-Frame Tower)

Structure Type	Line Voltage	Distance from Project ROW Centerline										
		-300	-200	-100	-50	-25	0	25	50	100	200	300
Project: 500 kV Guyed-Delta Existing: 115 kV H-Frame	2,000 A 96 A	6.3	14.1	52.8	147.2	227.3	258.4	227.5	147.4	52.5	29.9	5.4
Project: 500 kV Guyed-V Existing: 115 kV H-Frame	2,000 A 96 A	10.1	22.7	88.5	235.0	292.7	286.5	292.9	235.3	88.3	38.3	9.0
Project: 500 kV Self-Supporting Existing: 115 kV H-Frame	2,000 A 96 A	10.1	22.7	88.5	235.0	292.7	286.5	292.9	235.3	88.3	38.3	9.0

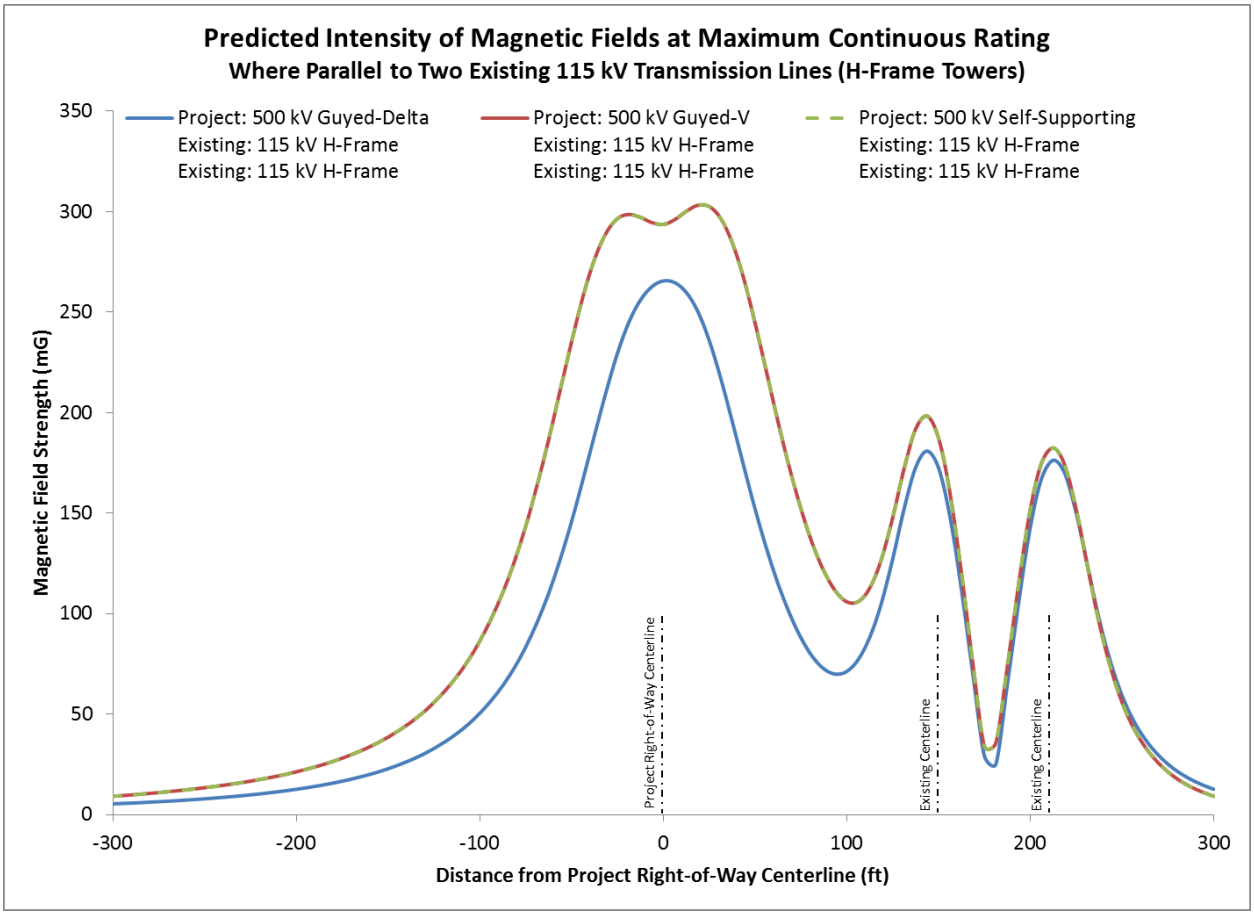


[Simulation assumes that Project ROW is adjacent to existing line ROW]

Magnetic Field Simulation Results: Max Continuous Rating

Predicted Intensity of Magnetic Fields (mG) at Maximum Continuous Rating
Where Parallel to Two Existing 115 kV Transmission Lines (H-Frame Towers)

Structure Type	Line Voltage	Distance from Project ROW Centerline										
		-300	-200	-100	-50	-25	0	25	50	100	200	300
Project: 500 kV Guyed-Delta Existing: 115 kV H-Frame Existing: 115 kV H-Frame	2,000 A 929 A 929 A	5.3	12.6	50.4	145.7	229.4	265.5	235.9	151.9	71.2	143.0	12.6
Project: 500 kV Guyed-V Existing: 115 kV H-Frame Existing: 115 kV H-Frame	2,000 A 929 A 929 A	9.1	21.3	86.3	235.1	296.4	293.6	302.5	244.5	105.8	152.0	9.1
Project: 500 kV Self-Supporting Existing: 115 kV H-Frame Existing: 115 kV H-Frame	2,000 A 929 A 929 A	9.1	21.3	86.3	235.1	296.4	293.6	302.5	244.5	105.8	152.0	9.1

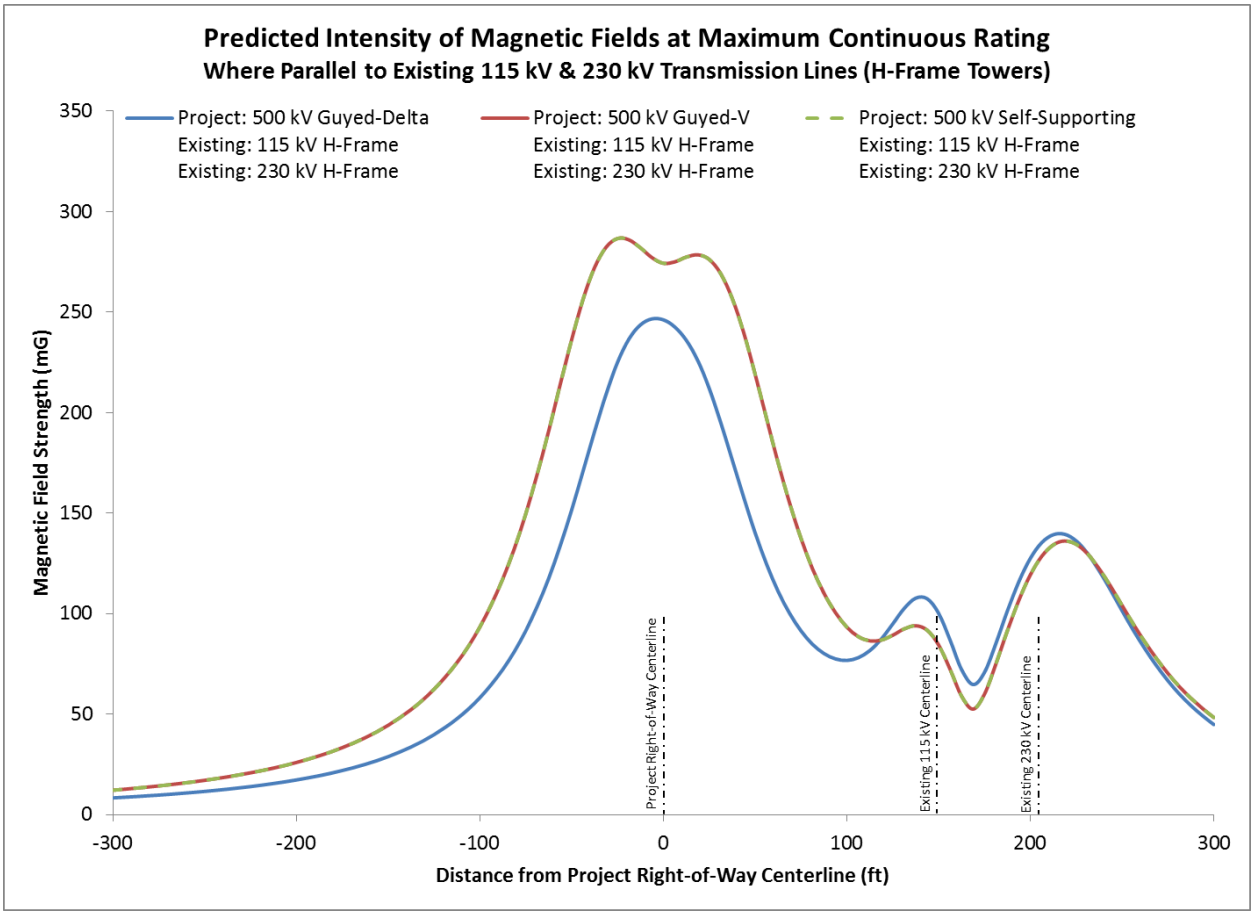


[Simulation assumes that Project ROW is adjacent to existing line ROW]

Magnetic Field Simulation Results: Max Continuous Rating

Predicted Intensity of Magnetic Fields (mG) at Maximum Continuous Rating
Where Parallel to Existing 115 kV & 230 kV Transmission Lines (H-Frame Towers)

Structure Type	Line Voltage	Distance from Project ROW Centerline										
		-300	-200	-100	-50	-25	0	25	50	100	200	300
Project: 500 kV Guyed-Delta Existing: 115 kV H-Frame Existing: 230 kV H-Frame	2,000 A 804 A 1,753 A	8.3	17.2	58.1	151.4	224.8	246.1	212.1	140.2	76.7	127.5	44.8
Project: 500 kV Guyed-V Existing: 115 kV H-Frame Existing: 230 kV H-Frame	2,000 A 804 A 1,753 A	12.1	25.9	93.3	236.0	286.6	274.3	276.2	219.1	93.3	119.3	48.3
Project: 500 kV Self-Supporting Existing: 115 kV H-Frame Existing: 230 kV H-Frame	2,000 A 804 A 1,753 A	12.1	25.9	93.3	236.0	286.6	274.3	276.2	219.1	93.3	119.3	48.3



[Simulation assumes that Project ROW is adjacent to existing line ROW]