McDermott, Bruce L.

From: McDermott, Bruce L.

Sent: Wednesday, June 30, 2004 2:11 PM

To: 'Eric Knapp, Esq., Branse & Willis, LLC'; 'Julie Donaldson Kohler (jdk@hurwitz-sagarin.com)'; 'Boucher, Peter G.'; 'David A. Ball, Cohen and Wolf, P.C.'; 'Deborah L. Moore, Esq., Legal Dept., City of Meriden'; 'Brian M. Stone'; Buchanan, Robert; 'jborgesking@hamden.com'; 'timothy.lynch@cityofmiddletown.com'; 'Honorable Derrylyn Gorski, 1st Selectman,Town of Bethany'

Cc: 'creteaw@NU.COM'; Amendola, Gloria J.; 'bartoab@NU.COM'; Richard Pinto (rich.pinto@uinet.com); george.davenport@uinet.com; John Prete (john.prete@uinet.com); 'zaklurc@NU.COM'; William Bailey (wbailey@exponent.com)

Subject: EMF Documents

Several recipients had trouble opening one of the attachments to my previous emails so I'm resending all of the attachments again. Please let me know if you have any difficulty with these attachments. Thanks.

Bruce

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Memorandum

To:	Derrylyn Gorski, Richard J. Buturla, Peter Boucher, Joaquina Burges King, Deborah Moore, Eric Knapp, Timothy Lynch, Julie Donaldson Kohler, Brian Stone, and David Ball
From:	Bruce L. McDermott
Date:	June 29, 2004
Re:	EMF Mitigation

Following up on the discussions regarding EMF mitigation methods that occurred during the June 23rd meeting at the Siting Council, I am writing to confirm that The Connecticut Light and Power Company and The United Illuminating Company ("the Companies") plan to prepare tables of calculated magnetic fields for each typical cross-section for locations at the center of the right of way ("ROW") and for designated distances from the center of the ROW and the edge of the ROW, to a distance of 150' from the edge of the ROW, at a 15GW load. A separate table will be prepared for each of the eight typical cross-sections of the transmission line for Segments 1 and 2 of the proposed route (Middletown to East Devon). The Companies plan to file these tables in advance of the July hearings. These new tables will show the mitigation of magnetic field levels that would result from specific design options.

As you know, the Companies submitted Exhibit 96 on May 28, 2004 (copy attached), which identifies mitigative effects of different structure configurations and height options for each cross-section. We ask each municipality through which Segments 1 and 2 of the proposed route would pass to identify which two of the configuration/height options in Exhibit 96 would be preferred by the municipality in the event that the Siting Council determined that Segments 1 and 2 of the transmission line should be overhead. For your convenience, we have listed below the municipality and the cross-section(s):

Municipality	Cross-Section
Bethany	8
Cheshire	7, 8
Durham	2
Haddam	2
Hamden	8
Meriden	3, 4
Middlefield	2
Middletown	1, 2
Milford	8
Orange	8
Wallingford	2, 4, 5, 6, 7
West Haven	8
Woodbridge	8

Please inform me by e-mail or by letter on or before July 2nd of which two configuration/height options in the applicable Exhibit 96 cross-section(s) would be preferred by the municipality if the Siting Council approves an overhead transmission line in these areas. If the Companies do not receive the requested information on configuration/height options from a municipality by July 2nd, then the Companies will proceed with calculations utilizing the configuration/height option that reduces magnetic field levels the most, compared to existing lines and/or the proposed route, for the applicable cross-section(s) for the municipality. The calculations for each cross-section and each configuration will be presented in the form of the attached example chart.

In addition, if the Companies are able to reach a global agreement with the Towns regarding the conclusion of EMF discovery, the Companies would agree to undertake the significant effort needed to prepare these same tables for the 27.7GW case, even though those data are not material to the determination of mitigation. Assuming such an agreement is reached, the Companies will work diligently to complete the 27.7 GW tables before the July hearings. However, given the amount of work required to prepare this additional set of tables, we cannot provide any assurance as to the delivery date. However, the Companies will not undertake preparation of the 27.7GW case unless and until the Towns agree that the Companies need only complete the actions discussed in this memorandum and that the Towns will not file additional interrogatories seeking additional EMF measurements at site-specific locations.

The Companies will not agree to undertake this significant effort unless it is part of a global resolution of EMF discovery. I suggest that we schedule a conference call to discuss the pending EMF discovery issues.

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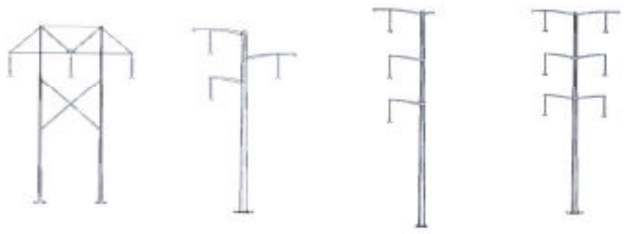
Cross Section 1 (15GW Case)

Typical Segment – Scovill Rock S/S to Chestnut Junction

(2.55 Miles long 335' ROW)

Site Condition		ROW Edge S/E		ROW Edge N/W		Cost / Mile (Million)		Structure Type in ROW[1]	Typical Height
		(mG)	(kV/m)	(mG)	(kV/m)	Direct	Increase		
Existing Lines (For Reference)		32.6	1.39	33.8	1.39	-	-	See Photo	80'
Proposed Lines on Existing ROW (For Reference)		18.6	1.44	30.1	1.40	2.1	-	ES,A	80'
OPTIONS									
1	345 kV Delta (optimized height & phasing)	6.2	0.75	28.8	1.39	2.1	0.0	ES, B	85'
2	345 kV Vertical	12.3	0.23	30.0	1.52	2.3	0.2	ES, C	105'
3	Vertical 345 kV Split Phase	7.5	0.05	29.6	1.45	3.1	1.0	ES, D	105'
4	Vertical 345 kV Split Phase 30 feet additional height	8.0	0.24	29.6	1.45	3.7	1.6	ES, D	135'

Existing ROW Cross Section



Structure Type A | Structure Type B | Structure Type C | Structure Type D

Comparison Table (↑ = Increase ↓ - Decrease - Neutral)								
Option	Magnetic Fields S/E		Magnetic Fields N/W		Height		Cost	Construction & Maintenance
	Existing	Proposed	Existing	Proposed	Existing	Proposed	Proposed	Proposed
1	↓	↓	↓	↓	↑	↑	-	↓
2	↓	↓	↓	↓	↑	↑	↑	↓
3	↓	↓	↓	↓	↑	↑	↑	↑
4	↓	↓	↓	↓	↑	↑	↑	↑

[1] If existing structures "ES" are to remain in the transmission ROW it is represented by "ES" in the Structure Type in ROW column.

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Cross Section 2 (15GW Case)

Typical Segment – Oxbow Jct. to Beseck S/S in the Towns of Haddam, Durham, Middlefield & Wallingford & the City of Middletown

(7.01 Miles 125' ROW)

Site Condition		ROW Edge S/E		ROW Edge N/W		Cost / Mile (Million)		Structure Type in ROW	Typical Height
		(mG)	(kV/m)	(mG)	(kV/m)	Direct	Increase		
Existing Lines **(For Reference)**		9.2	0.67	13.9	0.91	-	-	See Photo	57'
Proposed Lines on Existing ROW **(For Reference)**		30.4	0.31	17.1	0.21	2.8	-	A	105'
OPTIONS									
1	Proposed Lines additional 30 feet in height	17.6	0.57	12.2	0.20	3.2	0.4	A	135'
2	345 kV Split-Phase centered on ROW 115 kV UG in street	12.4	0.68	12.4	0.68	7.5	4.7	B	105'
3	345 kV Split-Phase centered on ROW 115 kV UG in street Additional 30 feet in height	6.2	0.65	6.2	0.65	6.7	3.9	B	135'
4	345 kV Split-Phase centered on ROW 115 kV UG in street Additional 45 feet in height	4.4	0.54	4.4	0.54	8.2	5.4	B	150'
5	Combination 345/115 kV Split Phase	11.0	0.75	6.6	0.13	5.0	2.2	C	150'
6	New ROW (115kV lines remain EMF Values are for 115kV only)	8.3	0.67	12.4	0.91	TBD	TBD	TBD	TBD

Existing ROW Cross Section

Structure Type A

Structure Type B

Structure Type C

Comparison Table
(↑ = Increase ↓ - Decrease - Neutral)

Option	Magnetic Fields S/E		Magnetic Fields N/W		Height		Cost	Construction & Maintenance
	Existing	Proposed	Existing	Proposed	Existing	Proposed	Proposed	Proposed
1	↑	↓	↓	↓	↑	↑	↑	-
2	↑	↓	↓	↓	↑	-	↑	↑
3	↓	↓	↓	↓	↑	↑	↑	↑
4	↓	↓	↓	↓	↑	↑	↑	↑
5	↑	↓	↓	↓	↑	↑	↑	↑↑
6	↓	↓	↓	↓	TBD	TBD	TBD	TBD

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Cross Section 3 (15GW Case)

Typical Segment – Black Pond Junction to East Meriden S/S in the City of Meriden

(1.40 Miles 275' ROW)

Site Condition		ROW Edge S/E		ROW Edge N/W		Cost / Mile		Structure Type in ROW[2]	Typical Height
		(mG)	(kV/m)	(mG)	(kV/m)	Direct	Increase		
Existing Lines **(For Reference)**		12.2	0.28	4.7	0.20	-	-	See Photo	130'
Proposed Lines on Existing ROW **(For Reference)**		5.9	0.15	12.9	0.29	2.4	-	ES, A , A	130'
OPTIONS									
1	Repositioned West Structures	2.6	0.07	14.6	0.24	2.4	0.0	ES, A, A	130'
2	As Proposed with strain insulators	6.1	0.15	11.4	0.15	2.5	0.1	ES, B, B	140'

Existing ROW Cross Section Looking North

Structure Type A

Structure Type B

Comparison Table (↑ = Increase ↓ - Decrease - Neutral)								
Option	Magnetic Fields S/E		Magnetic Fields N/W		Height		Cost	Construction & Maintenance
	Existing	Proposed	Existing	Proposed	Existing	Proposed	Proposed	Proposed
1	↓	↓	↑	↑	-	-	-	-
2	↓	↑	↑	↓	↑	↑	↑	↑

[2] If existing structures "ES" are to remain in the transmission ROW it is represented by "ES" in the Structure Type in ROW column.

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Cross Section 4 (15GW Case)

Typical Segment – East Meriden S/S to Beseck S/S in the Town of Wallingford

(1.41 Miles 320' ROW)

Site Condition		ROW Edge S/E		ROW Edge N/W		Cost / Mile (Million)		Structure Type in ROW[3]	Typical Height
		(mG)	(kV/m)	(mG)	(kV/m)	Direct	Increase		
Existing Lines **(For Reference)**		6.1	0.15	11.9	0.56	-	-	See Photo	130'
Proposed Lines on Existing ROW **(For Reference)**		5.3	0.09	11.5	0.21	2.8	-	ES, A	130'
OPTIONS									
1	As Proposed with strain insulators	5.0	0.09	10.1	0.38	2.8	0.0	ES, B, B	130'

Existing ROW Cross Section Looking North

Structure Type A

Structure Type B

Comparison Table (↑ = Increase ↓ - Decrease - Neutral)								
Option	Magnetic Fields S/E		Magnetic Fields N/W		Height		Cost	Construction & Maintenance
	Existing	Proposed	Existing	Proposed	Existing	Proposed	Proposed	Proposed
1	↓	↓	↓	↓	↑	↑	↑	↑

[3] If existing structures "ES" are to remain in the transmission ROW it is represented by "ES" in the Structure Type in ROW column.

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Cross Section 5 (15GW Case)

Typical Segment – Beseck S/S to East Wallingford Junction in the Town of Wallingford
(5.89 Miles 275' ROW)

Site Condition	ROW Edge S/E		ROW Edge N/W		Cost / Mile (Million)		Structure Type in ROW[4]	Typical Height
	(mG)	(kV/m)	(mG)	(kV/m)	Direct	Increase		
Existing Lines **(For Reference)**	5.2	0.13	24.7	1.21	-	-	See Photo	90'
Proposed Lines on Existing ROW **(For Reference)**	15.9	0.78	27.8	1.30	2.0	-	ES, A	90'
OPTIONS								
1 As Proposed with optimized phasing	6.6	0.69	20.0	1.17	2.0	0.0	ES, A	90'
2 345 kV Delta (optimized height & phasing)	4.2	0.48	21.2	1.16	2.0	0.0	ES, B	108'
3 345 kV Vertical – Inboard	5.5	0.30	23.8	1.05	2.2	0.2	ES, C	130'
4 Vertical 345 kV Split Phase	3.9	0.09	23.6	1.35	3.0	1.0	ES, D	130'
5 Horizontal split phase	4.0	0.47	23.8	1.33	3.9	1.9	ES, E	126'
6 Reconstructed ROW (Vertical Construction)	4.3	0.10	1.9	0.11	4.8	2.8	C, C	130'

Existing ROW Cross Section

Structure Type A

Structure Type B

Structure Type C

Structure Type D

Structure Type E

Comparison Table
(↑ = Increase ↓ - Decrease - Neutral)

Option	Magnetic Fields S/E		Magnetic Fields N/W		Height		Cost	Construction & Maintenance
	Existing	Proposed	Existing	Proposed	Existing	Proposed	Proposed	Proposed
1	↑	↓	↓	↓	-	-	-	-
2	↓	↓	↓	↓	↑	↑	-	↓
3	↑	↓	↓	↓	↑	↑	↑	↓
4	↓	↓	↓	↓	↑	↑	↑	↑
5	↓	↓	↓	↓	↑	↑	↑	↑
6	↓	↓	↓	↓	↑	↑	↑	↑

[4] If existing structures "ES" are to remain in the transmission ROW it is represented by "ES" in the Structure Type in ROW column.

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Cross Section 6 (15GW Case) East Segment

Typical Segment – East Wallingford Junction to North Haven Junction in the Town of Wallingford

(1.40 Miles 200' ROW)

Site Condition		ROW Edge S/E		ROW Edge N/W		Cost / Mile (Million)		Structure Type in ROW	Typical Height
		(mG)	(kV/m)	(mG)	(kV/m)	Direct	Increase		
Existing Lines **(For Reference)**		0.2	0.03	1.2	0.53	-	-	See Photo	57'
Proposed Lines on Existing ROW **(For Reference)**		5.4	0.25	14.3	0.20	3.3	-	A	105'
OPTIONS									
1	Composite with strain insulator	5.1	0.19	12.5	0.34	3.5	0.2	B	115'
2	As Proposed additional 30 feet in height	4.5	0.09	9.4	0.49	3.8	0.5	A	135'
3	Composite strain insulator structures additional 35 feet in height	4.1	0.04	7.7	0.51	4.1	0.8	B	150'

Existing ROW Cross Section Looking East

Structure Type A

Structure Type B

Comparison Table
(↑ = Increase ↓ - Decrease - Neutral)

Option	Magnetic Fields S/E		Magnetic Fields N/W		Height		Cost	Construction & Maintenance
	Existing	Proposed	Existing	Proposed	Existing	Proposed	Proposed	Proposed
1	↑	↓	↑	↓	↑	↑	↑	↑
2	↑	↓	↑	↓	↑	↑	↑	-
3	↑	↓	↑	↓	↑	↑	↑	↑

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Cross Section 6 (15GW Case) West Segment

Typical Segment – North Haven Junction to Wallingford Junction in the Town of Wallingford

(.64 Miles 200' ROW)

Site Condition	ROW Edge S/E		ROW Edge N/W		Cost / Mile (Million)		Structure Type in ROW	Typical Height
	(mG)	(kV/m)	(mG)	(kV/m)	Direct	Increase		
Existing Lines **(For Reference)**	0.3	0.03	2.4	0.52	-	-	See Photo	57'
Proposed Lines on Existing ROW **(For Reference)**	5.1	0.25	12.4	0.20	3.3	-	A	105'
OPTIONS								
1 Cross section does not run through residential or sensitive areas	-	-	-	-	-	-	-	-

Existing ROW Cross Section Looking West

Structure Type A

Comparison Table (↑ = Increase ↓ - Decrease - Neutral)								
Option	Magnetic Fields S/E		Magnetic Fields N/W		Height		Cost	Construction & Maintenance
	Existing	Proposed	Existing	Proposed	Existing	Proposed	Proposed	Proposed
1	-	-	-	-	-	-	-	-

Cross Section 7 (15GW Case)

Typical Segment – Wallingford Junction to the Cheshire Town Line

(2.42 Miles 200' ROW)

	Site Condition	ROW Edge S/E		ROW Edge N/W		Cost / Mile (Million)		Structure Type in ROW[5]	Typical Height
		(mG)	(kV/m)	(mG)	(kV/m)	Direct	Increase		
	Existing Lines (For Reference)	0.4	0.01	4.4	0.09	-	-	See Photo	90'
	Proposed Lines on Existing ROW (For Reference)	11.9	0.75	10.2	0.10	1.8	-	ES, A	108'
1	As Proposed Lines additional 20 feet in height	9.6	0.66	8.9	0.12	2.3	0.5	ES, A	128'
2	As Proposed Lines additional 50 feet in height	6.8	0.51	7.2	0.14	2.5	0.7	ES, A	158'
3	345 kV Vertical	7.7	0.28	4.4	0.16	1.9	0.1	ES, B	130'
4	345 kV Split Phase	3.6	0.12	4.4	0.03	2.9	1.1	ES, C	130'

Existing ROW Cross Section

Structure Type A

Structure Type B

Structure Type C

Comparison Table (↑ = Increase ↓ - Decrease - Neutral)								
Option	Magnetic Fields S/E		Magnetic Fields N/W		Height		Cost	Construction & Maintenance
	Existing	Proposed	Existing	Proposed	Existing	Proposed	Proposed	Proposed
1	↑	↓	↑	↓	↑	↑	↑	-
2	↑	↓	↑	↓	↑	↑	↑	↑
3	↑	↓	-	↓	↑	↑	↑	-
4	↑	↓	-	↓	↑	↑	↑	↑

[5] If existing structures "ES" are to remain in the transmission ROW it is represented by "ES" in the Structure Type in ROW column.

Cross Section 7B (15GW Case) Supported Change

Typical Segment – Cheshire Town line to Cook Hill Junction in the Town of Cheshire

(.44 Miles 200' ROW)

Site Condition	ROW Edge S/E		ROW Edge N/W		Cost / Mile (Million)		Structure Type in ROW[6]	Typical Height
	(mG)	(kV/m)	(mG)	(kV/m)	Direct	Increase		
Existing Lines **(For Reference)**	0.4	0.01	4.4	0.09	-	-	See Photo	90'
Proposed Lines on Existing ROW (one 115kV is UG) **(For Reference)**	6.2	0.21	17.9	0.15	7.5	-	A	130'
OPTIONS								
1 As Proposed Lines additional 20 feet in height (One 345 kV is UG)	5.5	0.12	13.4	0.22	8.1	0.6	A	150'
2 345 kV Split Phase (One 115kV is UG, one 115 kV remains on existing structure)	3.1	0.38	7.4	0.12	8.1	0.6	ES, B	130'

Existing ROW Cross Section

Structure Type A

Structure Type B

Comparison Table
(↑ = Increase ↓ - Decrease - Neutral)

Option	Magnetic Fields S/E		Magnetic Fields N/W		Height		Cost	Construction & Maintenance
	Existing	Proposed	Existing	Proposed	Existing	Proposed	Proposed	Proposed
1	↑	↓	↑	↓	↑	↑	↑	-
2	↑	↓	↑	↓	↑	-	↑	↑

[6] If existing structures "ES" are to remain in the transmission ROW it is represented by "ES" in the Structure Type in ROW column.

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Cross Section 8A (15GW Case) Supported Change

Typical Segment – Cook Hill Junction (Cheshire) to the Hamden Town Line

(.42 Miles 165' ROW)

Site Condition		ROW Edge S/E		ROW Edge N/W		Cost / Mile (Million)		Structure Type in ROW	Typical Height
		(mG)	(kV/m)	(mG)	(kV/m)	Direct	Increase		
Existing Lines **(For Reference)**		6.2	0.70	2.8	0.62	-	-	See Photo	57',57',80
Proposed Lines on Existing ROW – 115kV UG **(For Reference)**		5.0	0.16	16.0	0.31	8.4	-	A	105'
OPTIONS									
1	As Proposed Lines additional 20 feet in height – 115kV UG	4.3	0.11	11.2	0.55	9.0	0.6	A	125'
2	As Proposed Lines additional 50 feet in height – 115kV UG	3.3	0.10	6.7	0.52	9.5	1.1	A	155'
3	345 kV Split Phase (1) 115kV circuit OH	1.8	0.12	6.0	0.57	9.9	1.5	B, C	80',105'
4	345 kV split-phase additional 30 feet in height (1) 115kV circuit OH)	0.8	0.17	3.0	0.62	10.8	2.4	B, C	110', 135'
5	345 kV Split-Phase centered on ROW with 115 kV UG in street	3.6	0.15	3.6	0.15	12.5	4.1	C	105'

Existing ROW Cross Section Looking South

Structure Type A

Structure Type B

Structure Type C

Comparison Table
(↑ = Increase ↓ - Decrease - Neutral)

Option	Magnetic Fields S/E		Magnetic Fields N/W		Height		Cost	Construction & Maintenance
	Existing	Proposed	Existing	Proposed	Existing	Proposed	Proposed	Proposed
1	↓	↓	↑	↓	↑	↑	↑	-
2	↓	↓	↑	↓	↑	↑	↑	↑
3	↓	↓	↑	↓	↑	-	↑	↑
4	↓	↓	↑	↓	↑	↑	↑	↑
5	↓	↓	↑	↓	↑	↑	↑	↑

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Cross Section 8 (15GW Case) North Segment

Typical Segment – Cheshire / Hamden Town Line to Glen Lake Junction (Woodbridge)

(7.13 Miles 165' ROW)

Site Condition	ROW Edge S/E		ROW Edge N/W		Cost / Mile (Million)		Structure Type in ROW	Typical Height
	(mG)	(kV/m)	(mG)	(kV/m)	Direct	Increase		
Existing Lines **(For Reference)**	4.7	0.70	2.6	0.62	-	-	See Photo	57',57',80
Proposed Lines on Existing ROW **(For Reference)**	8.7	0.45	15.7	1.48	3.8	-	A,B	85',80'
OPTIONS								
1 As Proposed Lines additional 20 feet in height	7.4	0.43	11.7	1.15	4.6	0.8	A,B	105',100'
2 As Proposed Lines additional 50 feet in height	5.4	0.26	7.5	0.73	5.4	1.6	A,B	135', 130'
3 345 kV Vertical Compact Construction	9.5	0.31	16.6	0.09	4.2	0.4	C,B	105', 80'
4 345 kV Split Phase	2.5	0.39	5.8	0.56	5.0	1.2	D,B	105', 80'
5 345 kV Split Phase additional 30 feet in height	0.9	0.34	2.9	0.62	5.5	1.7	D,B	135', 110'
6 345 kV Split-Phase centered on ROW with 115 kV UG in street (115 kV XLPE)	3.6	0.15	3.6	0.15	10.2	6.4	D	105'

Existing ROW Cross Section Looking South

Structure Type A Structure Type B Structure Type C Structure Type D

Comparison Table (↑ = Increase ↓ - Decrease - Neutral)								
Option	Magnetic Fields S/E		Magnetic Fields N/W		Height		Cost	Construction & Maintenance
	Existing	Proposed	Existing	Proposed	Existing	Proposed	Proposed	Proposed
1	↑	↓	↑	↓	↑	↑	↑	-
2	↑	↓	↑	↓	↑	↑	↑	↑
3	↑	↑	↑	↑	↑	↑	↑	-
4	↓	↓	↑	↓	↑	↑	↑	↑
5	↓	↓	↑	↓	↑	↑	↑	↑
6	↓	↓	↑	↓	↑	↑	↑↑	↑↑

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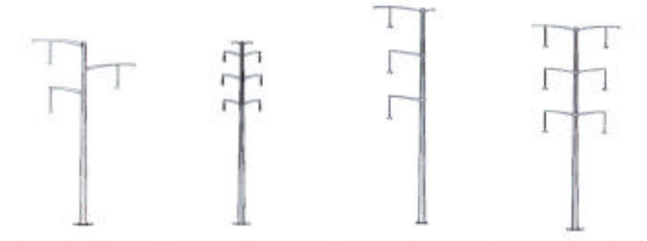
Cross Section 8 (15GW Case) Middle Segment

Typical Segment – Glen Lake Junction (Woodbridge) to Pease Road Junction (Woodbridge) Segment "B"

(2.91 Miles 165' ROW)

Site Condition	ROW Edge S/E		ROW Edge N/W		Cost / Mile (Million)		Structure Type in ROW	Typical Height
	(mG)	(kV/m)	(mG)	(kV/m)	Direct	Increase		
Existing Lines **(For Reference)**	6.2	0.70	2.8	0.62	-	-	See Photo	57',57',80
Proposed Lines on Existing ROW **(For Reference)**	8.7	0.45	15.7	1.48	3.8	-	A,B	85', 80'
OPTIONS								
1 As Proposed Lines additional 20 feet in height	7.4	0.43	11.7	1.15	4.6	0.8	A,B	105',100'
2 As Proposed Lines additional 50 feet in height	5.4	0.26	7.5	0.73	5.4	1.6	A,B	135', 130'
3 345 kV Vertical Compact Construction	9.6	0.31	16.6	0.09	4.2	0.4	C,B	105', 80'
4 345 kV Split Phase	2.7	0.39	5.8	0.56	5.0	1.2	D,B	105', 80'
5 345 kV Split Phase additional 30 feet in height	0.9	0.34	2.9	0.62	5.5	1.7	D,B	135', 110'
6 345 kV Split-Phase centered on ROW with 115 kV UG in street	3.6	0.15	3.6	0.15	10.2	6.4	D	105'

Existing ROW Cross Section Looking South



Structure Type A | Structure Type B | Structure Type C | Structure Type D

Comparison Table (↑ = Increase ↓ - Decrease - Neutral)								
Option	Magnetic Fields S/E		Magnetic Fields N/W		Height		Cost	Construction & Maintenance
	Existing	Proposed	Existing	Proposed	Existing	Proposed	Proposed	Proposed
1	↑	↓	↑	↓	↑	↑	↑	-
2	↓	↓	↑	↓	↑	↑	↑	↑
3	↑	↑	↑	↑	↑	↑	↑	-
4	↓	↓	↑	↓	↑	↑	↑	↑
5	↓	↓	↑	↓	↑	↑	↑	↑
6	↓	↓	↑	↓	↑	↑	↑↑	↑↑

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Cross Section 8 (15GW Case) South Segment

Typical Segment – Pease Road Junction (Woodbridge) to East Devon S/S (Milford) Segment "C"

(12.0 Miles 165' ROW)

Site Condition		ROW Edge S/E		ROW Edge N/W		Cost / Mile (Million)		Structure Type in ROW	Typical Height
		(mG)	(kV/m)	(mG)	(kV/m)	Direct	Increase		
Existing Lines **(For Reference)**		3.9	0.70	1.6	0.62	-	-	See Photo	57',57',80
Proposed Lines on Existing ROW **(For Reference)**		11.2	0.45	16.0	1.48	3.8	-	A,B	85', 80'
OPTIONS									
1	As Proposed Lines additional 20 feet in height	8.7	0.43	11.9	1.15	4.6	0.8	A,B	105', 100'
2	As Proposed Lines additional 50 feet in height	6.1	0.26	7.7	0.73	5.4	1.6	A,B	135', 130'
3	345 kV Vertical Compact Construction	5.4	0.31	16.7	0.09	4.2	0.4	C,B	105', 80'
4	345 kV Split Phase	1.7	0.29	5.9	0.61	5.0	1.2	D,B	105', 80'
5	345 kV Split Phase additional 30 feet in height	0.6	0.44	2.9	0.62	5.5	1.7	D,B	135', 110'
6	345 kV Split-Phase centered on ROW with 115 kV UG in street	3.6	0.15	3.6	0.15	10.2	6.4	D	105'

Existing ROW Cross Section Looking South

Structure Type A Structure Type B Structure Type C Structure Type D

Comparison Table
(↑ = Increase ↓ - Decrease - Neutral)

Option	Magnetic Fields S/E		Magnetic Fields N/W		Height		Cost	Construction & Maintenance
	Existing	Proposed	Existing	Proposed	Existing	Proposed	Proposed	Proposed
1	↑	↓	↑	↓	↑	↑	↑	-
2	↑	↓	↑	↓	↑	↑	↑	↑
3	↑	↓	↑	↑	↑	↑	↑	-
4	↓	↓	↑	↓	↑	↑	↑	↑
5	↓	↓	↑	↓	↑	↑	↑	↑
6	↓	↓	↑	↓	↑	↑	↑↑	↑↑

Cross Section 1 (15GW Case)

Typcal Segment - Scovill Rock S/S to Chestnut Junction
(2.55 Miles long 335' RCW)

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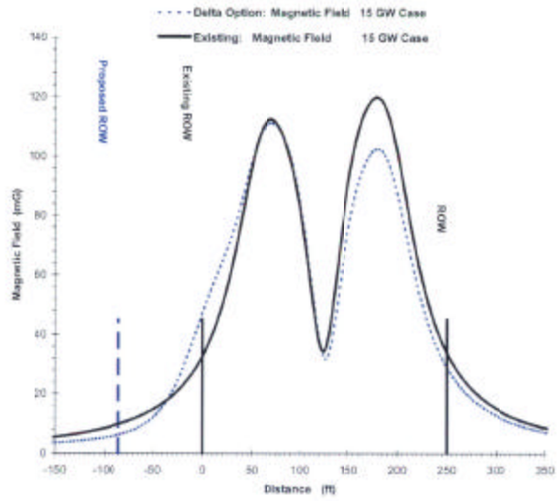
Transmission ROW

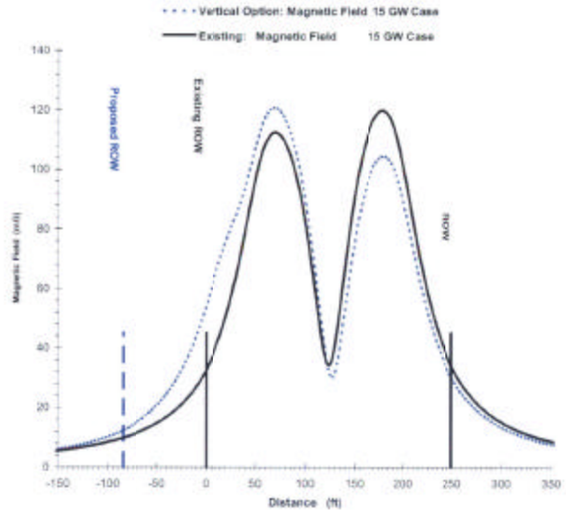
	Site Condition	180'	165'	120'	105'	90'	75'	60'	45'	30'	15'	S/E Edge	165'	90'	Center	90'	165'	N/W Edge	15'	30'	45'	60'	75'	90'	105'	120'	135'	150'
	Existing Lines (For Reference)	8.4	9.2	10.3	11.5	12.9	14.7	16.8	19.4	22.8	27.0	32.6	42.9	27.0	79.2	89.1	66.7	28.8	26.0	23.5	20.0	17.3	15.1	13.3	11.8	10.3	9.5	8.5
	Proposed Lines on Existing ROW (For Reference)	4.0	4.4	4.9	5.5	6.3	7.2	8.4	9.9	11.9	14.7	18.8	45.5	59.2	105.4	26.0	162.3	30.1	22.0	19.1	14.6	12.1	10.2	8.7	7.5	6.6	5.9	5.2
	OPTIONS																											
1	Option selected by Town	2.1	2.3	2.5	2.7	3.0	3.3	3.7	4.1	4.6	5.3	6.2	31.0	77.0	109.7	38.4	102.1	28.8	21.8	17.0	13.7	11.2	9.4	8.0	6.9	6.0	5.2	4.6
2	Option selected by Town	3.2	3.6	3.9	4.4	4.9	5.6	6.4	7.4	8.6	10.2	12.3	38.3	86.8	114.2	38.7	104.2	30.0	22.7	17.8	14.3	11.8	9.9	8.4	7.3	6.3	5.6	4.9

This information is for illustration purposes only, is subject to change and should not be relied upon as reflecting actual conditions

Option 1 - Selected by Town



Option 2 - Selected by Town



Note: Data values will be reflective of option selected by Town.

DRAFT - For Discussion Purposes ONLY

EMF Cross Section Edge of ROW(2).xls

McDermott, Bruce L.

From: Frank Monte E. [mfrank@cohenandwolf.com]
Sent: Friday, July 02, 2004 11:12 AM
To: McDermott, Bruce L.
Cc: Ball David A.; Julie Donaldson Kohler (JKohler@hss-law.com)
Subject: EMF Discovery

With respect to the EMF modeling, Woodbridge requests that you study and provide data concerning mitigation options 4 (345 kV Split Phase) & 5 (345 kV Split Phase additional 30 feet in height) as shown on Cross-Section 8 at both 15GW and 27GW. Woodbridge also understands that this study is not in lieu of what is required under the Public Act, and we would expect that this information will also be provided in a timely manner. While it agrees to have these studies conducted to resolve the discovery dispute, Woodbridge, at this time, in no way concedes that the mitigation measures present a viable solution to the EMF problem.

I am leaving the office now. If there are any issues, please call David or me on Tuesday.

Have good 4th.

Monte