July 9, 2018

Ms. Melanie Bachman
Acting Executive Director
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

Re: Petition No. Petition 1346 - Manchester 3A Substation

Dear Ms. Bachman:

This letter provides the response to requests for the information listed below.

Response to CSC-01 Interrogatories dated 06/22/2018
CSC-001, 002, 003, 004, 005, 006, 007, 008, 009, 010, 011, 012, 013

Very truly yours,

Kathleen Shanley
Manager
Transmisson, Siting
As Agent for CL&P
dba EversourceEnergy

cc: Service List

Witness: **NO WITNESS**
Request from: **Connecticut Siting Council**

Question:
(Construction) The proposed replacement tower would be approximately 23 feet wide at the base and tapering to approximately 5 feet wide at the top. As a comparison, estimate the top and bottom widths of the existing tower.

Response:
The existing tower is 30 feet wide at the base and 8 feet, 6 inches wide at the top.

Witness: **NO WITNESS**
Request from: **Connecticut Siting Council**

Question:
(Construction) Would the final fence design of the substation expansion match the existing substation?

Response:
Yes, the final fence design of the substation expansion would match the fence design of the existing substation.

Witness: **NO WITNESS**
Request from: **Connecticut Siting Council**

Question:
(Construction) Referencing Figure 4 – Nearest Residence Map, the proposed tower compound would be located on the southeast section of the existing, square fenced laydown area. How would the existing fenced laydown area be modified to accommodate the tower compound? For example, would all of the existing laydown area fencing be removed or just a portion of it to fit in the proposed tower compound?

Response:
All the existing laydown area fencing would be removed to construct the proposed fence-enclosed tower compound.

Witness: **NO WITNESS**
Request from: **Connecticut Siting Council**

Question:
(Construction) Page 3 of the Petition notes that new water and sewer lines would be run to the new control enclosure. What would Eversource do with the existing water and sewer lines to the existing enclosure? For example, would existing lines be capped and left in place?

Response:
The existing water and sewer lines that currently supply the 345-kV control enclosure will be removed from the substation and capped at a location just inside the substation fence line.

Witness: **NO WITNESS**
Request from: **Connecticut Siting Council**

Question:
(Construction) Is it correct to say that the proposed project is located within the Federal Emergency Management Agency (unshaded) Zone X, an area outside of the 100-year and 500-year flood zones?

Response:
Yes, the proposed project is located within the Federal Emergency Management Agency (FEMA) Zone X.

Witness: **NO WITNESS**
Request from: **Connecticut Siting Council**

Question:
(Construction) Calculate the amount of cut and fill (in cubic yards) required for the proposed project. If there would be excess or "net cut" material, what would Eversource do with the excess material?

Response:
The area of expansion for the new control enclosure and the new Telecom compound will require minimal grading and therefore minimal cut and fill. However, the project will require soil removal for new foundation construction and fill to remediate removed below grade facilities and foundations. Approximately 460 cubic yards of material will be removed for the construction of the tower and compound. Approximately 5,200 cubic yards of material will be removed for the construction of the new control enclosure, below-grade facilities, and the new security fence. The removal of the obsolete 345-kV control enclosure and existing below-grade facilities will require approximately 3,500 cubic yards of fill.

If the quality of the excavated material is acceptable, it will be reused on site. If soil cannot be reused on-site, it would be field sampled for characterization and disposed of at pre-approved soil disposal facility in accordance with Eversource policies and state and Federal regulations.

Witness: **NO WITNESS**
Request from: **Connecticut Siting Council**

Question:
(Construction) Would a Connecticut Department of Energy and Environmental Protection (DEEP) General Permit be necessary, or would the total disturbance area be less than one acre?

Response:

For this proposed project, Eversource developed and submitted a Stormwater Pollution Control Plan (SWPCP) to DEEP to register under a General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities (General Permit). The SWPCP is currently in review with DEEP.

Witness: **NO WITNESS**
Request from: **Connecticut Siting Council**

Question:
(Construction) Provide the proposed construction hours and days of the week/weekend. Is it possible that Sunday or other non-standard hours might be necessary due to inclement weather, scheduled outages, storm-related delays, or other issues?

Response:
The proposed construction hours and days are Monday through 7am-7 pm, Saturday. Yes, it is possible that Sunday and other non-standard hours might be necessary and, if so, Eversource would submit a timely request to the Siting Council in advance of the need for work hours beyond this time frame.

Witness: **NO WITNESS**
Request from: **Connecticut Siting Council**

Question:
(Construction) Would the proposed backup generator be used for Eversource's use only, or would it have some extra (kilowatt) capacity to supply future wireless carrier(s) as well? What is the estimated run time for the backup generator based on its fuel tank size?

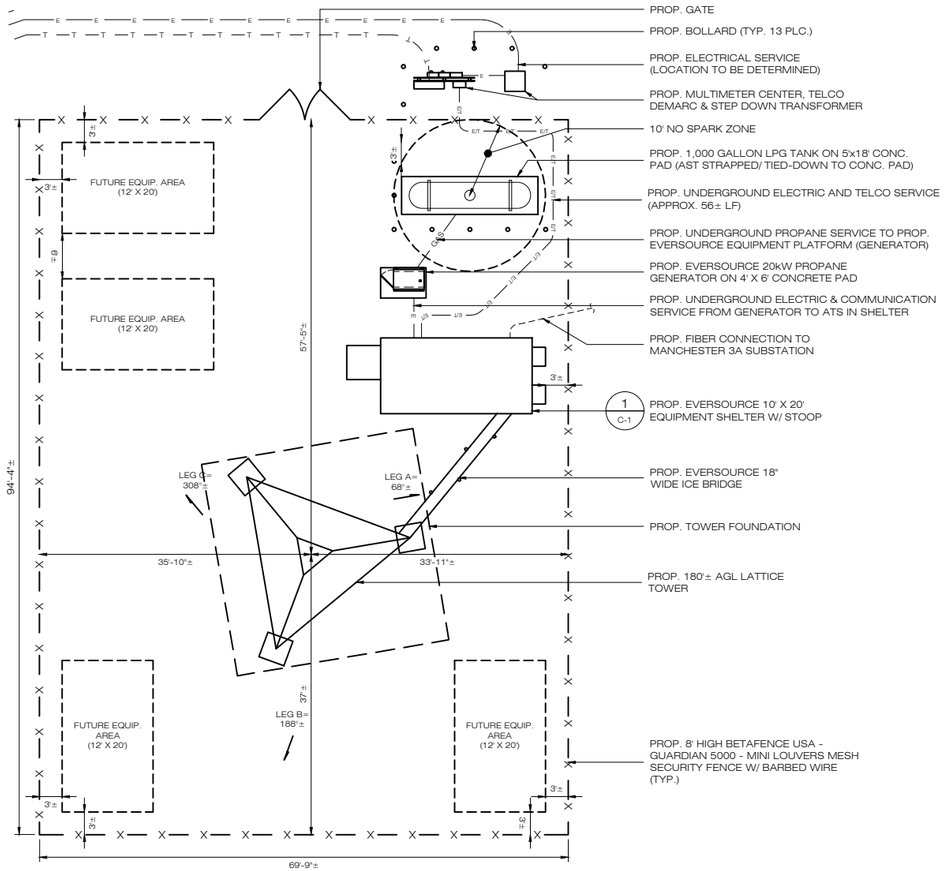
Response:
The proposed generator will be for Eversource's use only and the run time at 100% is approximately 5 days on a 1,000 gallon propane tank.

Witness: **NO WITNESS**
Request from: **Connecticut Siting Council**

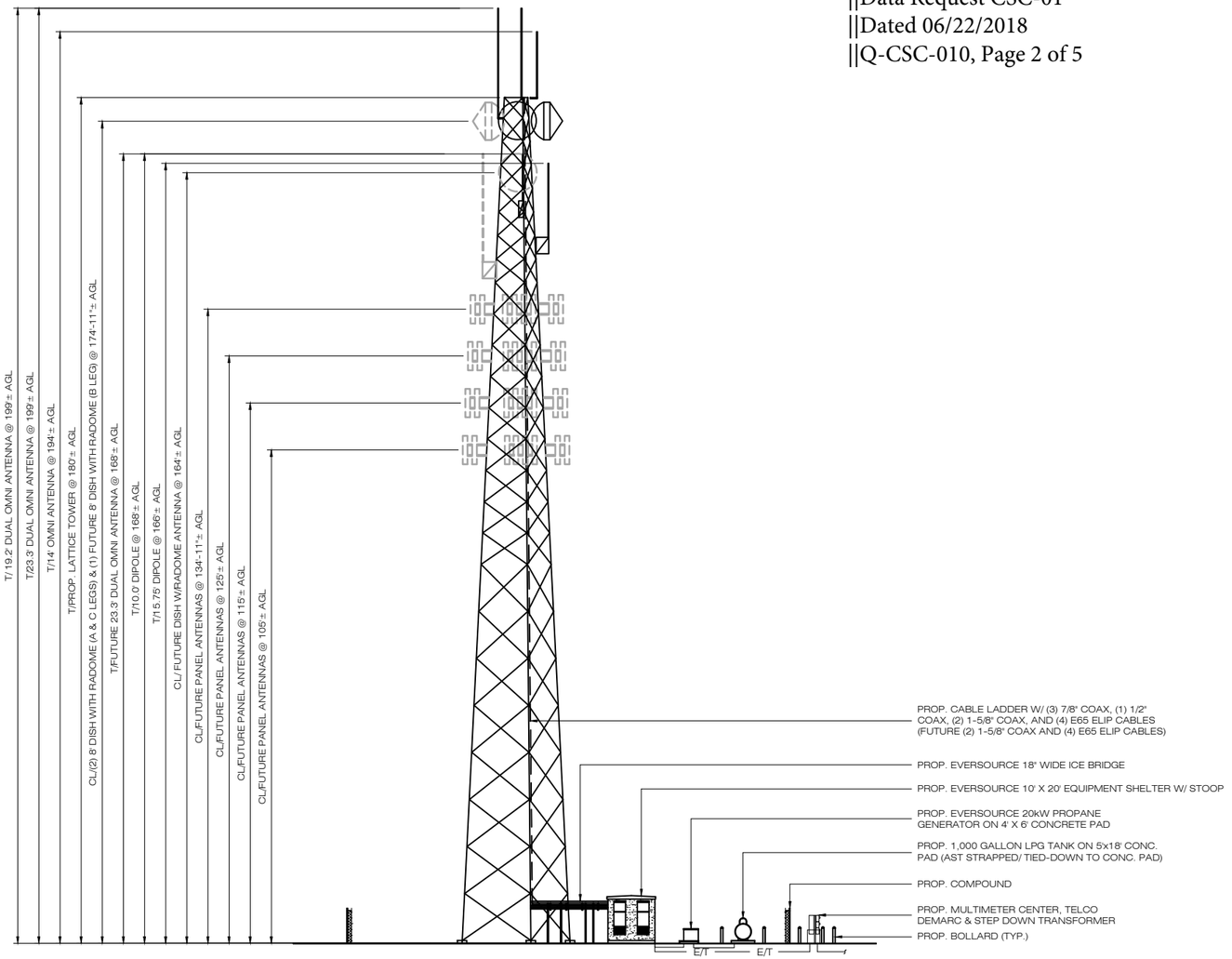
Question:
(Construction) Reference Table 1 (Antenna Schedule) in the Petition and Tower Elevation Sheet A-1 and please respond to the following:

a) Sheet A-1 shows a "T/20.0' Dual Omni Antenna" and a "T/21.0' Dual Omni Antenna." Table 1 shows a "19-ft Dual Omni" antenna and a "23-foot Dual Omni" antenna. Please reconcile drawing A-1 with the inventory on Table 1.
b) Should the "19-ft Dual Omni" antenna on Table 1 be approximately 21 feet long per its specifications sheet?
c) Sheet A-1 shows a "T/20.0' Dipole" antenna and a "T/10.0' Dipole" antenna. Table 1 shows a "10-foot Dipole" antenna and a "15-foot Dipole" antenna. Please reconcile drawing A-1 with Table 1.
d) Please correct Sheet A-1 and Table 1 if necessary.

Response:
a) The information contained in Table 1 for the "19.2-ft Dual Omni" antenna and the "23.3-ft Dual Omni" antenna has been modified to be more exact. Attached is SHEET A-1, REV. 2: 07/02/18, which includes the revision to the correct antenna information.
b) Attached is a revised specification sheet for the dbSpectra "19.2-ft Dual Omni" antenna.
c) The correct antennas are a "T/10.0 Dipole" and a "T/15.75 Dipole". Both Sheet A-1 and Table 1 have been revised accordingly and the revised versions are attached.
d) The revised versions of Sheet A-1 and Table 1 with the above-referenced corrections are attached.



1 A-1 COMPOUND PLAN
SCALE : 1" = 10'-0"



2 A-1 EAST ELEVATION
SCALE : 1" = 15'-0"

FULL SCALE (24"x36")
GRAPHIC SCALE
10 0 5 10 20
(IN FEET) 1 inch = 10 ft.

HALF SCALE (11"x17")
GRAPHIC SCALE
20 0 10 20 40
(IN FEET) 1 inch = 20 ft.

SITE NUMBER: #1008221
APT FILING NUMBER: CT259800

EVERSOURCE ENERGY
107 SELDEN STREET
BERLIN, CT 06037

ALL-POINTS TECHNOLOGY CORPORATION
3 SADDLEBROOK DRIVE
KILLINGWORTH, CT 06419
WWW.ALLPOINTSTECH.COM
PHONE: (860)-663-1697
FAX: (860)-663-0935

PERMITTING DOCUMENTS
250 OLCOTT STREET
MANCHESTER, CT, 06040

DESIGN TYPE:
COMPOUND PLAN CONCEPT

REVISIONS:
REV.0: 02/26/18: FOR REVIEW: BJP
REV.1: 06/01/18: 30% SUBMISSION: BJP
REV.2: 07/02/18: CSC INTERROGATORIES: BJP

COMPOUND PLAN AND EASTERN ELEVATION

APT FILING NUMBER: CT259800
APT DRAWING NUMBER: A-1
DRAWN BY: JT | SCALE: AS NOTED
CHECKED BY: BJP | DATE: 02/26/18

SHEET NUMBER: A-1

TABLE 1 - ANTENNA SCHEDULE (REVISED)

Antenna Type[1]	Antenna Make/Model or Capacity[2]	Antenna Center Line Elevation (ft. AGL)	Comments	Frequency (MHz)
14-ft. Omni	(1) Kreco CO-41-AN	±187.0	Hartford Ops / Meter & Service	RX: 49.02
19.2-ft. Dual Omni w/TTA	(1) dbSpectra DS9A09F36D-N (1) Bird 430-94C-09168-M-110_48	±189.4	DSCADA	TX: 936.95 & 938.95 RX: 897.95 & 899.95
23.3-ft. Dual Omni	(1) Sinclair SC351D-HF2LDF(D00-G6)	±187.3	EDACS / Voice Radio	TX: 451.675 RX: 456.675
8' Dish w/ Radome	(1) RFS PADX8-W59AC	±175.0	Bolton Microwave	TX: 6093.45 RX: 6345.49
8' Dish w/ Radome	(1) RFS PADX8-W59AC	±175.0	Talcott Microwave	TX: 6004.50 RX: 6256.54
8' Dish w/ Radome	(1) RFS PADX8-W59AC	±175.0	Future Eversource	NA - Future Dish
8' Dish w/ Radome	(1) RFS PADX8-W59AC	±164.0	Future Eversource	NA - Future Dish
23.3-ft. Dual Omni	(1) Sinclair SC351D-HF2LDF(D00-G6)	±156.4	Future Eversource	NA - Future Antenna
10-ft Dipole	(1) Sinclair SD212-SF2P2SNF(D00)	±163.0	Yankee Gas	TX & RX: 173.39625
15.75-ft Dipole	(1) Comprod 531-70HD*8	±158.1	Hartford Underground	TX & RX: 47.90
Wireless Carrier	(12) Panel Antennas (8'x1'), (12) RRHs, (3) MDB	±135.0	Future Carrier	TBD
Wireless Carrier	(12) Panel Antennas (8'x1'), (12) RRHs, (3) MDB	±125.0	Future Carrier	TBD
Wireless Carrier	(12) Panel Antennas (8'x1'), (12) RRHs, (3) MDB	±115.0	Future Carrier	TBD
Wireless Carrier	(12) Panel Antennas (8'x1'), (12) RRHs, (3) MDB	±105.0	Future Carrier	TBD

[1] Nominal dimensions shown for all antennas, where known.

[2] Antenna Make/Model listed where known; otherwise the anticipated capacity for each vertical location is provided.

Attachment 3: Antenna Specifications (Revised Specification - dbSpectra Antenna)

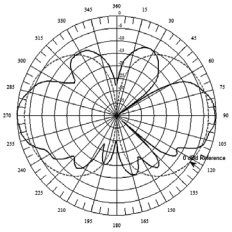
dbSpectra

900 MHz Omni Antennas (890-960 MHz)

		890-960 MHz															
	Model Number	**DS9A03F36U-N**	**DS9A03F36U-D**	**DS9A06F36U-N**	**DS9A06F36U-D**	**DS9A09F36U-N**	**DS9A09F36U-D**	**DS9A10F36U-N**	**DS9A10F36U-D**	**DS9A12F36U-N**	**DS9A12F36U-D**	**DS9A03F36D-N**	**DS9A03F36D-D**	**DS9A06F36D-N**	**DS9A06F36D-D**	**DS9A09F36D-N**	**DS9A09F36D-D**	**DS9A06F36T-N**	**DS9A06F36T-D**
	Input Connector	N(F)	7/16 DIN	N(F)	7/16 DIN	N(F)	7/16 DIN	N(F)	7/16 DIN	N(F)	7/16 DIN	N(F)	7/16 DIN	N(F)	7/16 DIN	N(F)	7/16 DIN	N(F)	7/16 DIN
	Type	Single		Single		Single		Single		Single		Dual		Dual		Dual		Triple	
ELECTRICAL	**Bandwidth**, MHz	70		70		70		70		70		70		70		70		70	
ELECTRICAL	**Power**, Watts	500		500		500		500		500		350		350		350		250	
ELECTRICAL	**Gain**, dBd	3		6		9		10		12		3		6		9		6	
ELECTRICAL	**Horizontal Beamwidth**, degrees	360		360		360		360		360		360		360		360		360	
ELECTRICAL	**Vertical Beamwidth**, degrees	30		16		8		6		3		30		16		8		16	
ELECTRICAL	**Beam Tilt**, degrees	0		0		0		0		0		0		0		0		0	
ELECTRICAL	**Isolation (minimum)**, dB	N/A		N/A		N/A		N/A		N/A		40		40		45		40	
MECHANICAL	**Number of Connectors**	1		1		1		1		1		2		2		2		3	
MECHANICAL	**Flat Plate Area**, $ft^2(m^2)$	0.24 (0.02)		1.28 (0.12)		2.26 (0.21)		3.25 (0.3)		4.33 (0.4)		1.38 (0.13)		2.27 (0.21)		3.83 (0.36)		3.47 (032)	
MECHANICAL	**Lateral Windload Thrust**, lbf(N)	11 (48)		48 (214)		85 (377)		122 (543)		163 (723)		31 (139)		85 (374)		144 (641)		87 (385)	
MECHANICAL	**Survival Wind Speed**																		
MECHANICAL	**without ice**, mph(kph)	437 (703)		250 (402)		150 (241)		105 (169)		75 (121)		379 (610)		150 (241)		90 (145)		136 (219)	
MECHANICAL	**with 0.5" radial ice**, mph(kph)	319 (513)		225 (362)		127 (204)		88 (142)		60 (97)		294 (473)		125 (201)		75 (121)		106 (171)	
MECHANICAL	**Mounting Hardware** included	DSH2V3R		DSH2V3R		DSH3V3R		DSH3V3N		DSH3V3N		DSH2V3R		DSH3V3R		DSH3V3N		DSH3V3N	
DIMENSIONS	**Length**, ft(m)	2.9 (0.9)		6.7 (2)		11.4 (3.5)		16.3 (5)		21.8 (6.6)		8 (2.4)		11.4 (3.5)		19.2 (5.9)		15.3 (4.7)	
DIMENSIONS	**Radome O.D.**, in(cm)	2 (5.1)		3 (7.6)		3 (7.6)		3 (7.6)		3 (7.6)		3 (7.6)		3 (7.6)		3 (7.6)		3 (7.6)	
DIMENSIONS	**Mast O.D.**, in(cm)	2.5 (6.4)		2.5 (6.4)		2.5 (6.4)		2.5 (6.4)		2.5 (6.4)		2.5 (6.4)		2.5 (6.4)		2.5 (6.4)		3.2 (8.13)	
DIMENSIONS	**Net Weight** w/o bracket, lb(kg)	5.5 (2.5)		18 (8.2)		30 (13.6)		45 (20.4)		52 (23.6)		21 (9.5)		31 (14.1)		50 (22.7)		40 (18.1)	
DIMENSIONS	**Shipping Weight**, lb(kg)	9.6 (4.4)		28 (12.7)		60 (27.2)		75 (34)		82 (37.2)		51 (23.1)		61 (27.7)		80 (36.3)		50 (22.7)	

VERTICAL PATTERNS

DS9A03F36U-N
DS9A03F36U-D



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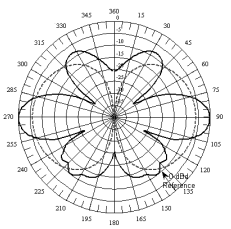

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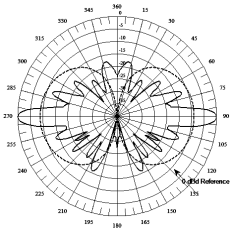

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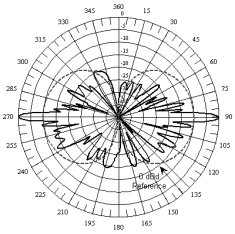

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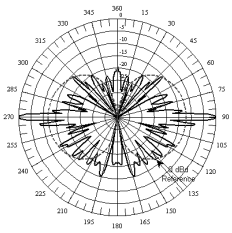

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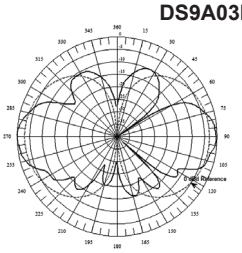

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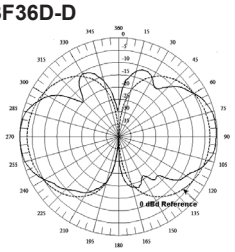

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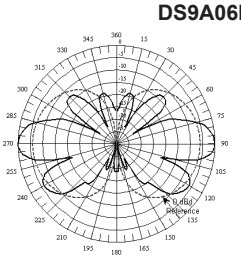
DS9A06F36D-N
DS9A06F36D-D



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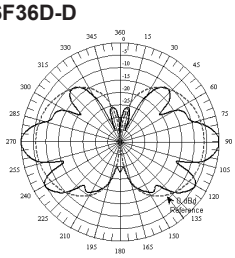

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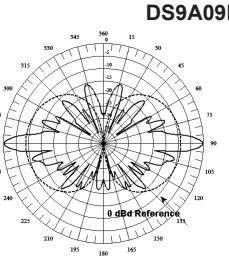
DS9A09F36D-N
DS9A09F36D-D



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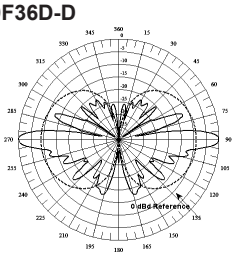

Bottom

dbSpectra

900 MHz Omni Antennas (890-960 MHz)

		890-960 MHz					
	Model Number	**DS9A06F36U3N**	**DS9A06F36U3D**	**DS9A06F36U6N**	**DS9A06F36U6D**	**DS9A10F36U3N**	**DS9A10F36U3D**
	Input Connector	N(F)	7/16 DIN	N(F)	7/16 DIN	N(F)	7/16 DIN
	Type	Beamtilt		Beamtilt		Beamtilt	
ELECTRICAL	**Bandwidth**, MHz	70		70		70	
	Power, Watts	500		500		500	
	Gain, dBd	6		6		10	
	Horizontal Beamwidth, degrees	360		360		360	
	Vertical Beamwidth, degrees	16		16		6	
	Beam Tilt, degrees	3 Down		6 Down		3 Down	
	Isolation (minimum), dB	N/A		N/A		N/A	
MECHANICAL	**Number of Connectors**	1		1		1	
	Flat Plate Area, $ft^2(m^2)$	1.28 (0.12)		1.28 (0.12)		2.5 (0.23)	
	Lateral Windload Thrust, lbf(N)	48 (214)		48 (214)		122 (543)	
	Survival Wind Speed **without ice**, mph(kph) **with 0.5" radial ice**, mph(kph)	 250 (402) 225 (362)		 250 (402) 225 (362)		 105 (169) 88 (142)	
	Mounting Hardware included	DSH2V3R		DSH2V3R		DSH3V3N	
DIMENSIONS	**Length**, ft(m)	6.7 (2)		6.7 (2)		16.3 (5)	
	Radome O.D., in(cm)	3 (7.6)		3 (7.6)		3 (7.6)	
	Mast O.D., in(cm)	2.5 (6.4)		2.5 (6.4)		2.5 (6.4)	
	Net Weight w/o bracket, lb(kg)	18 (8.2)		18 (8.2)		45 (20.4)	
	Shipping Weight, lb(kg)	28 (12.7)		28 (12.7)		75 (34)	

VERTICAL PATTERNS

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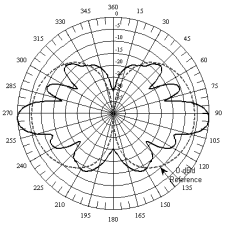

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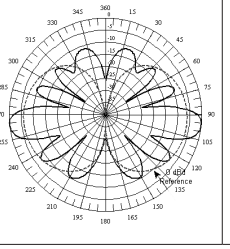
DS9A06F36U6D



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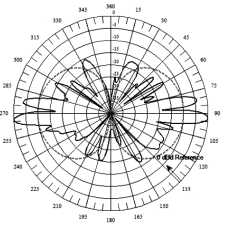

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Request from: **Connecticut Siting Council**

Question:
(Aviation Safety) Page 18 of the Petition notes that, "The Replacement Tower's coordinates, height, and structure type were submitted to the Federal Aviation Administration (FAA) to determine if it requires FAA registration and lighting or marking." Has Eversource received a response from FAA? If yes, is marking or lighting required? Is registration with FAA required?

Response:
The explanation on Page 18 of the Petition describing the method to determine whether FAA requirements for registration and lighting and marking apply to the Replacement Tower was incorrect. The Replacement Tower's coordinates, height and structure type were reviewed against the FAA's obstruction criteria using the Federal Communication Commission's TOWAIR system, which confirmed that FAA notification is not required. The report from the TOWAIR system is included in Attachment 8 in the Petition.

Witness: **NO WITNESS**
Request from: **Connecticut Siting Council**

Question:
(Environmental) Would the proposed project comply with the 2002 Connecticut Guidelines for Erosion and Sedimentation Control and the 2004 Connecticut Stormwater Quality Manual, as applicable?

Response:
Yes, the proposed project would comply with the 2002 Connecticut Guidelines for Erosion and Sedimentation Control and the 2004 Connecticut Stormwater Quality Manual.

Witness: **NO WITNESS**
Request from: **Connecticut Siting Council**

Question:
(Environmental) Would proposed station service transformers have containment measures built into the foundations in the event of leakage of insulating oil? Would the proposed oil-filled circuit breakers have or require containment measures as well?

Response:

The foundation design for the proposed station service transformers does not include measures for oil containment. In accordance with Federal Spill Prevention Containment & Countermeasure (SPCC) rules under 40 CFR 112, there are above-ground oil volume triggers that require spill plans and either engineered secondary containment or a strong response plan. In the case of the proposed transformers, the oil volumes are not significant and do not trigger requirements under 40 CFR 112. However, all Eversource substations are covered under a SPCC Multi Plan, which includes a strong contingency in the event of an oil release. The proposed 115-kV breakers are not oil insulated and therefore, do not require oil containment measures. The new breakers are SF6 gas insulated and will be replacing the obsolete oil-filled circuit breakers.