

the Town of Phillips due to the WEF. The Statement shall be signed and approved by the Maine Public Utilities Commission and shall include proof of leases or rights of way for transmission lines, and an analysis of the residual capacity in the grid that will be available to other local generating projects after the construction of the WEF.

8.6 A WEFT with a nameplate capacity less than 1 kW shall be equipped with a braking system designed to limit rotor speed and prevent blade flutter.

8.7 A WEFT with a nameplate capacity equal to or greater than 1 kW but less than or equal to 10 kW shall be equipped with a redundant braking system that includes stall regulation.

8.8 A WEFT with a nameplate capacity of more than 10 kW shall be equipped with a redundant braking system that includes both aerodynamic over-speed controls (including variable pitch, tip, and other similar systems) and mechanical brakes. Mechanical brakes shall operate in fail-safe mode. Stall regulation shall not be considered a sufficient braking system for over-speed protection on WEFTs with a nameplate capacity of more than 10 kW.

8.9 WEFs shall be designed and sited to prevent the disruption or loss of emergency or private radio, telephone, television, or similar signals. Interference with such communications shall be grounds for ordering the immediate shut down of the WEF until the interference has been remedied.

8.10 The minimum distance between the ground and the blades of a WEF shall be 25 feet as measured at the lowest point in the arc of the blades.

8.11 WEFTs shall be mounted on monopole towers with no guy wires except that WEFTs with a nameplate capacity of under 1 kW may be mounted on structure roof tops.

8.12 The color of WEFTs and MTs shall be off-white or grey or some other unobtrusive color approved by the Town of Phillips Planning Board.

8.13 WEFs shall not be used to display signs or advertising except for signs at ground level identifying the turbine manufacturer, the WEF Owner/Operator, emergency contact information, and appropriate warnings as required by national, state, and local laws.

8.14 All construction activities must conform to the approved site plan, including any conditions of approval and changes approved by the Code Enforcement Officer and/or the Planning Board.

8.15 **Modification During Construction** If at any time it appears necessary or desirable to modify the approved plans before or during construction of the WEF, the Code Enforcement Officer, with assistance at the Applicant's expense from such staff, consultants or experts as the CEO deems appropriate, is authorized to approve minor modifications due to unforeseen circumstances such as encountering hidden outcrops of bedrock, natural springs, etc. The Code Enforcement Officer shall issue any approval under this section in writing and shall transmit a copy of the approval to the Selectmen and Planning Board. Revised plans shall be filed with the Planning Board for the record. For major modifications such as relocation of rights-of-way, relation of WEFTs, changes in grade by more than 1%, etc., the Applicant shall submit to the Planning board an amended plan for review and approval.

9.0 Public Health and Safety Standards

9.1 **Setback Standards.** All MTs and WEFs must be sited so as to satisfy the Setback Standards calculated in Table 1 for the following hazards:

- Falling and Debris Hazard
- Flicker Hazard
- Acoustic Hazard (See Table 2 for calculations of typical setback distances)

TABLE 1

SETBACK DISTANCE STANDARDS ALL MEASUREMENTS AND DISTANCES IN FEET

SETBACK (FT)	METEOROLOGICAL TOWER	TYPE 0 & TYPE 1	TYPE 2	TYPE 3
FALLING & DEBRIS HAZARD	$S_{fid}=H_o \times 1.5$ Where: S_{fid} Setback Distance H_o Height Overall	$S_{fid}=H_o \times 1.5$ Where: S_{fid} . Setback Distance H_o . Height Overall	$S_{fid}=H_o \times 1.5$ Where: S_{fid} . Setback Distance H_o . Height Overall	$S_{fid}=H_o \times 1.5$ Where: S_{fid} . Setback Distance H_o . Height Overall
FLICKER HAZARD	Not Applicable	$S_c=(H_o/.176) \times 1.5$ Where: S_c . Setback Distance H_o . Height Overall Not including 120° to 240° True	$S_c=(H_o/.176) \times 1.5$ Where: S_c . Setback Distance H_o . Height Overall Not including 120° to 240° True	Flicker Analysis Report
ACOUSTIC HAZARD	Not Applicable	$S_s=10^{((L_w+L_u+L_s+4\log(n))-5-30)/20}$ Where: S_s - Setback Distance L_w - Manufacturer's Guaranteed Maximum Sound Power Level, in dBA re 1pW L_u - Uncertainty Factor = 5 L_s - Safety Factor = 2 n - No. of Turbines for one turbine $4\log(n)=0$	$S_s=10^{((L_w+L_u+L_s+4\log(n))-5-30)/20}$ Where: S_s - Setback Distance L_w - Manufacturer's Guaranteed Maximum Sound Power Level, in dBA re 1pW L_u - Uncertainty Factor = 5 L_s - Safety Factor = 2 n - No. of Turbines for one turbine $4\log(n)=0$	$S_s=10^{((L_w+L_u+L_s+4\log(n))-5-30)/20}$ Where: S_s - Setback Distance L_w - Manufacturer's Guaranteed Maximum Sound Power Level, in dBA re 1pW L_u - Uncertainty Factor = 5 L_s - Safety Factor = 2 n - No. of Turbines

TABLE 2
Acoustic Setback Distance in Feet

Property Line Criteria, dBA:	30
Uncertainty Factor, dBA:	5
Safety Factor, dBA:	2

Manufacturer's Guaranteed Maximum Sound Power Level, dBA re 1pW	Number of Wind Turbines									
	1	2	3	4	5	6	7	8	9	10
70	211	243	263	279	292	302	312	320	328	335
71	237	272	295	313	327	339	350	359	368	376
72	266	306	331	351	367	381	393	403	413	422
73	299	343	372	394	412	427	441	452	463	473
74	335	385	417	442	462	479	494	508	520	531
75	376	432	468	496	519	538	555	570	583	596
76	422	484	525	556	582	603	622	639	654	668
77	473	544	589	624	653	677	698	717	734	750
78	531	610	661	701	732	760	783	805	824	841
79	596	684	742	786	822	852	879	903	924	944
80	668	768	833	882	922	956	986	1,013	1,037	1,059
81	750	861	934	989	1,035	1,073	1,107	1,137	1,164	1,189
82	841	967	1,048	1,110	1,161	1,204	1,242	1,275	1,306	1,334
83	944	1,084	1,176	1,246	1,303	1,351	1,393	1,431	1,465	1,496
84	1,059	1,217	1,320	1,398	1,461	1,516	1,563	1,606	1,644	1,679
85	1,189	1,365	1,481	1,568	1,640	1,701	1,754	1,801	1,844	1,884
86	1,334	1,532	1,661	1,760	1,840	1,908	1,968	2,021	2,069	2,113
87	1,496	1,719	1,864	1,974	2,064	2,141	2,208	2,268	2,322	2,371
88	1,679	1,928	2,091	2,215	2,316	2,402	2,478	2,545	2,605	2,661
89	1,884	2,164	2,347	2,485	2,599	2,695	2,780	2,855	2,923	2,985
90	2,113	2,428	2,633	2,789	2,916	3,024	3,119	3,203	3,280	3,350
91	2,371	2,724	2,954	3,129	3,272	3,393	3,500	3,594	3,680	3,758
92	2,661	3,056	3,315	3,511	3,671	3,807	3,927	4,033	4,129	4,217
93	2,985	3,429	3,719	3,939	4,119	4,272	4,406	4,525	4,633	4,732
94	3,350	3,848	4,173	4,420	4,622	4,793	4,943	5,077	5,198	5,309
95	3,758	4,317	4,682	4,959	5,186	5,378	5,547	5,697	5,832	5,957
96	4,217	4,844	5,253	5,564	5,818	6,034	6,223	6,392	6,544	6,683
97	4,732	5,435	5,894	6,243	6,528	6,771	6,983	7,172	7,343	7,499
98	5,309	6,098	6,613	7,005	7,325	7,597	7,835	8,047	8,239	8,414
99	5,957	6,842	7,420	7,860	8,219	8,524	8,791	9,029	9,244	9,441
100	6,683	7,677	8,326	8,819	9,221	9,564	9,863	10,130	10,372	10,593
101	7,499	8,614	9,342	9,895	10,347	10,731	11,067	11,366	11,637	11,885
102	8,414	9,665	10,482	11,102	11,609	12,040	12,417	12,753	13,057	13,335
103	9,441	10,844	11,760	12,457	13,025	13,509	13,932	14,309	14,650	14,962
104	10,593	12,168	13,195	13,977	14,615	15,158	15,632	16,055	16,438	16,788
105	11,885	13,652	14,806	15,682	16,398	17,007	17,540	18,014	18,444	18,836
106	13,335	15,318	16,612	17,596	18,399	19,082	19,680	20,212	20,694	21,135
107	14,962	17,187	18,639	19,743	20,644	21,411	22,081	22,679	23,219	23,714
108	16,788	19,284	20,913	22,152	23,163	24,023	24,775	25,446	26,052	26,607
109	18,836	21,637	23,465	24,855	25,989	26,954	27,798	28,551	29,231	29,854
110	21,135	24,278	26,328	27,888	29,160	30,243	31,190	32,035	32,798	33,497
111	23,714	27,240	29,541	31,290	32,719	33,934	34,996	35,943	36,800	37,584
112	26,607	30,564	33,145	35,108	36,711	38,074	39,266	40,329	41,290	42,170
113	29,854	34,293	37,190	39,392	41,190	42,720	44,057	45,250	46,329	47,315
114	33,497	38,477	41,728	44,199	46,216	47,933	49,433	50,771	51,981	53,088
115	37,584	43,172	46,819	49,592	51,855	53,781	55,465	56,966	58,324	59,566

9.2 The applicant shall compute or look up, as appropriate, and graph the required setback for each hazard as a circle for a single unit or as a series of connected arcs for multiple units centered on each turbine and submitted with the required setback graphically superimposed to scale on town maps identifying lot owners and lot property lines.

9.3 **Acoustic Standards.** Sound levels due to the operation of the WEF shall not exceed 30 dBA or 50 dBC at property lines or structures in the Town of Phillips. Owner/Operators may request a waiver of these standards by means of written Covenants as specified in section 14.2.3 of this Ordinance.

9.3.1 Sound measurements shall be carried out at appropriate property lines or structures as soon as possible after the Town of Phillips Planning Board determines that a violation of the noise standards may have occurred.

9.3.2 All sound measurements shall be made by a professional acoustical engineer who is a Full Member of the Institute of Noise Control Engineering (INCE) or who possesses some comparable qualification. The engineer shall be chosen by the Owner/Operator from a list provided by the Planning Board and paid by the Owner/Operator.

9.3.3 Except as specifically noted otherwise, sound measurements shall be conducted in compliance with the American National Standards Institute (ANSI) Standard S12.18-1994 "Outdoor Measurements of Sound Pressure."

9.3.4 Sound level meters and calibration equipment shall comply with the latest version of ANSI Standard S1.4 "Specifications for General Purpose Sound Level Meters," and shall have been calibrated at a recognized laboratory within one year before the sound measurements are carried out.

9.4 An Application for a permit to construct a Type 3 WEF with one or more turbines having a nameplate capacity of 100 kW or more shall include a Fire Prevention and Fire Fighting Plan that has been approved by the Town of Phillips Fire Department. The plan shall identify a response plan to address all potential WEF fire scenarios and include a list of hazardous materials that may be encountered.

9.5 The Owner/Operator of a Type 3 WEF with one or more turbines having a nameplate capacity of 100 kW or more shall ensure that the WEF complies with the following fire control and prevention measures and assumes responsibility for all associated incremental costs.

- Use of fireproof or fire resistant building materials and buffers as required by state law or the Phillips Fire Department.
- Incorporation of a self-contained fire protection system in the WEF turbine nacelle.
- Maintenance of firebreak areas, cleared of vegetation, as required by state law or the Phillips Fire Department.
- Provision for any additional fire fighting or rescue personnel, services, training, materials, and vehicles as may be required to deal with any emergency related to the WEF that is beyond the current capabilities of the Phillips Fire Department.

9.6 The Owner/Operator of all WEFs shall be responsible for compliance with all ordinances, regulations, and laws applicable to the generation, storage, cleanup, and disposal of hazardous materials connected with the WEF.

9.7 **Road and Property Risk Assessment**

9.7.1 An application for a permit to construct a Type 2 or Type 3 WEF shall include a Road and Property Risk Assessment that has been approved by the Town of Phillips Road Commissioner.

9.7.2 The Town of Phillips Planning Board shall require changes to the Road and Property Risk Assessment plan that it deems appropriate to protect public safety, to protect public and private property, and to address anticipated costs to the town.