



**Maine Mountain Power LLC**

## **Responses to questions from LURC's first set of questions dated March 29, 2006**

### 1. *Section 2: Title-Right-Interest*

- A. Jeff Pidot (LURC counsel at the Maine Attorney General's Office) reviewed the documentation you submitted with the petition and the letter submitted by Bill Plouffe representing the Maine Appalachian Trail Club (MATC) and the Appalachian Trail Conservancy (ATC), and had several questions. It was unclear to him how the documentation supplied provides evidence that Maine Mountain Power (MMP) is the applicant because the deeds and Options are held by Redington Mountain Windpower (RMW). I now understand that Jeff Thaler, your counsel, is in the processes of addressing Jeff Pidot's questions.

*Attachment 1 contains three documents which transfer specific rights to Maine Mountain Power: Assignment of Development Rights, Assignment of Project Rights, and a redacted Ground Lease and Wind Easement. These documents provide a more complete discussion of the Right, Title and Interest and clarify why MMP is the applicant.*

*These attachments demonstrate that all necessary right, title and interest to all development activities have been assigned to Maine Mountain Power and that Maine Mountain Power is appropriately the permit applicant..*

- B. It appears you submitted the deed for the purchase of the Redington Mountain parcel by Kibby Windpower in 1998, but did not include the documentation of the transfer of that parcel to RMW's ownership. Additionally, the Memorandum of Ground Lease and Wind Easement only is between RMW and MMP, not between Kibby Windpower and MMP. Please supply the missing deed, or point to where this is addressed in the application.

*On July 2, 1998, Kibby Windpower LLC changed its name to Redington Mountain Windpower LLC (RMW). Articles of amendment can be found in Attachment 2. In addition, RMW's certificate of good standing from the State of Maine certifies that Redington Mountain Windpower LLC, formerly Kibby Windpower, LLC is a duly formed limited liability company. This certificate is included in Attachment 2; it may also be found in the FORMS section of the permit application under RMW LLC Certificate of Good Standing. This explains that there is a valid lease between MMP and RMW.*

- C. Where does the line along the Maine Bureau of Parks and Lands (BPL) easement connect to the Central Maine Power (CMP) underground section of the utility line? The site plan says it starts on the west side of Route 27 as an underground line. The boundaries of the BPL parcel (shown on Schedule A of the Option Agreement) are unclear.

*The Central Maine Power underground section of the power line will begin approximately 600' west of Route 27 on the BPL parcel. The boundary of the BPL parcel is shown in green on Schedule A of the Option Agreement (located in Section 2 - Bureau of Park and Lands Electrical ROW Option Agreement in the permit application) referenced above. Looking at Schedule B of the Option Agreement referenced above, BPL owns property north of the Appalachian Trail Corridor on both sides of Route 27.*

- D. The 115 kV utility line appears to straddle the various township lines along much of its route. Is this an accurate representation? If so, is half of the TRI for these portions of the line in one Option Agreement and the other half in another Option Agreement? Please clarify if the various land ownerships on both sides of the township lines are the same, or if the land ownerships split at the township lines.

*The 115 kV power line is drawn accurately on the project map. Surveyors and environmental assessors have walked this portion of the right of way and have determined that the town line shown on the maps is not entirely accurate. The power line path shown on our Base Map, located in the Appendix of Section 1 of our permit application, is the actual, blazed town-line that exists in the field. The power line runs adjacent to the actual town line in Redington Township, Carrabassett Valley and enters the Wyman Township as shown on the Base Map and we have easements with these landowners. The power line does not run through Coplin Plantation.*

## 2. Section 3: Financial Capacity

- A. Regarding financial capacity, Jeff Pidot expressed the concern that just looking at the information submitted, while Edison Mission Group (Edison) is identified as the funding source, it is unclear what Edison's responsibility is, and how the actual ability to fund the project is guaranteed to Maine Mountain Power (MMP). Like the questions regarding TRI, I understand that Jeff Thaler has discussed this with Jeff Pidot, and is in the process of addressing his concerns.

*Attachment 3 contains the May 26, 2006 Letter of Intent to fund from Edison Mission Energy, a company with assets of \$6.8 billion as of December 31, 2005; together with the fiscal year 2005 Form 10-K of Edison Mission Energy; and the 2005 Annual Report of parent company Edison International, which had assets of \$34 billion as of December 31, 2005.*

*Also in Attachment 3 is supplemental information documenting Edison Mission's technical capability.*

- B. If production tax credits (PTC) are for projects coming on-line before December 31, 2007, is the funding of this project contingent upon its being on-line by then? In addition, will equipment availability due to a PTC driven boom-bust cycle affect when this project could be built?

*The production tax credit is important to the economic viability of this project, as with almost all US wind energy projects. Provided that permitting is completed in a timely fashion, the project's anticipated funding and construction schedule will allow for completion prior to December 31, 2007, which is currently the on-line deadline for obtaining PTCs. To support this schedule, Edison has already procured 30 V90 wind turbines from Vestas for 2007 delivery to the Redington site. Provided permitting is successfully completed in a timely manner, Edison anticipates allocating these turbines to the project. The turbine delivery schedule to which Vestas has agreed would allow for the turbines to be delivered, installed and commissioned in advance of the December 31, 2007 deadline.*

- C. Will the CMP portion of the line be paid for by MMP, per the System Impact Study? Was the additional \$3.2 million for various system upgrades that CMP identified in the Study to be funded by MMP included in the total development cost estimate?

*Yes, the CMP portion of the line and the \$3.2 million for system upgrades described in the System Impact Study and identified as Endless Energy's responsibility, will be paid for by MMP. These costs have been included in the budget as construction, not development expenses.*

- D. The application says evidence of the power marketing would be supplied after a permit is issued, but before construction. Some evidence providing assurance that the negotiations are realistic and on-going should be supplied prior to a permit being issued. How is the marketing to consumers within Maine going?

*On March 17, 2006, Maine Mountain Power signed a binding Power Purchase Agreement with Constellation New Energy, Inc. pursuant to which Constellation will purchase all of the electricity and the renewable energy credits generated by the project at fixed prices for the first 10 years of the project's operations. The signing of this long-term Power Purchase Agreement with Constellation, a leading retail provider of electricity in Maine, provides evidence of strong demand for the energy to be produced by the project, and also helps demonstrate the financial viability of the project.*

*Constellation New Energy is a subsidiary of Constellation Energy (NYSE: CEG, a Fortune 200 company with 2005 revenues of \$17.1 billion), and is a leading competitive supplier of electricity, natural gas and energy-related services to*

*commercial and industrial customers in Maine and New England, as well as throughout North America. Constellation NewEnergy, serves more than 10,000 commercial and industrial customers throughout 31 states and 3 Canadian provinces, representing more than 15,000 MWs of peak load and more than 300 billion cubic feet of annual natural gas consumption. Constellation Energy is the nation's largest competitive supplier of electricity to large commercial and industrial customers and the nation's largest wholesale power seller.*

*Constellation intends to sell the power from the MMP project at a fixed price over 10 years on a retail basis to medium and large-sized business customers, giving first priority to customers in the local area and then in Maine. Schools, hospitals and colleges are likely end-customers for the wind-generated power. Constellation has recently begun its retail marketing process, and has indicated that initial interest among retail customers in Maine is strong.*

3. *Demonstration of need.* Section 1, Appendix 11, lists names of people supporting windpower. How were the names gathered? If by petition, where is the original petition, and where are the original signatures? Were all the names gathered in June of 2005, or were they compiled into a list then? What about the stated support of Maine businesses? Do you have the original letters from Maine businesses in support of the project?

*Endless Energy and Maine Mountain Power have been very active in outreach activities within the local community and the State. We have provided information on the project at numerous public events including conferences and association meetings. Most of the supporters' names were gathered at outreach events such as the Common Ground Fair or via Endless Energy's web page.*

*Original petitions and signatures are in the Endless Energy office in Yarmouth and will be made available for review at the LURC hearing. They were signed over several years from 2002 to today.*

*Scanned original letters of support from Maine organizations can be found in Attachment 4.*

4. *Central Maine Power Company (CMP) System Impact Study.* Please supply the appendices for this study that are referred to in the study. Please also provide an update on the pending approval of CMP's study by ISO-NE, which the application stated was expected to be completed by March 2006.

*Formal ISO approval is expected on June 7.*

*Following final approval of the System Impact Study, ISO-NE and CMP will complete their Facility Study and then proceed to negotiate an Interconnection Agreement with MMP. To expedite completion of this Facility Study MMP will be funding an*

*Engineering and Procurement Agreement with CMP to allow them to begin work on the study. Following completion of the study MMP will proceed to negotiate an Interconnection Agreement.*

5. *Lot information and subdivision assessment.* Per our previous discussion about this, please continue to investigate if any lots were sold to others by Dallas Company since 1990. Also, please provide lot numbers assigned by the Maine Revenue Service after April 1 for any lots purchased by RMW recently.

*A conversation with an official from the Registry of Deeds in Franklin County revealed that the Dallas Company did not sell any lots other than those sold to RMW. Maine Revenue Service estimates that the lot numbers for the RMW parcels purchased last summer will be assigned sometime this coming summer. For now, they refer to those recently purchased RMW lots as a portion of tax map FR005, Plan 1, Lot 1.*

6. *Maine Historic Preservation Commission (MHPC).* Please provide copies of any correspondence received by MMP in response to the letters sent to MHPC that were included the application, especially if those responses were received after December 19, 2005.

*Attachment 5 of this memo is a copy of the March 10, 2006 letter from Earle Shettleworth, State Historic Preservation Officer of MHPC. Mr. Shettleworth concluded there will be “no historical properties [architectural or archaeological] adversely impacted by the proposed undertaking”.*

7. *U.S. Department of the Navy.* Please provide copies of any correspondence sent to the Navy regarding setbacks or overall concerns; or correspondence received by MMP (if any), especially after December 19, 2005

*Included in the application as Attachment 6 is a copy of a presentation given to the US Navy on December 22, 2004, giving an overview of the wind farm project. There has been no official correspondence between MMP and the Navy since that date.*

8. *Federal Aviation and Aeronautics Commission (FAA).* Please provide (a) a copy of the letter, and if any the submittal form, sent by MMP to the FAA on October 12, 2005; (b) the hard copy of FAA’s approval of the lighting scheme you recently received (sent to LURC electronically on 3-17-06); (c) the details of the extent to which the lighting scheme was prepared in consultation with FAA, and any documentation of the consultation process (i.e. letters, emails, etc.); and (d) the name and phone number of your contact person at FAA.

*Forms to the FAA were submitted electronically via the internet. The FAA approval which is outlined below, includes the information submitted electronically.*

- a) *Approval letters for each turbine (Attachment 7)*

- b) *An updated lighting map showing the current FAA lighting recommendations, i.e., 6 turbines to be lighted on Redington and 9 lighted on Black Nubble (Attachment 8). The FAA is recommending synchronized, red flashing lights at night - no daytime lighting.*
- c) *Email trail with FAA (Attachment 9) discussing daytime lighting and the color of the turbines. The FAA requested white (not gray) turbines.*
- d) *Our contact is FAA specialist, Donna O’Neill, phone number 1-816-329-2525. Donna signed the approval letters.*

9. What lightning protection for the turbines is included in the proposed design?

*The Vestas V90 turbines to be deployed at the project will incorporate the latest and most advanced turbine lightning protection systems currently available. The system is designed to enable the turbines to sustain direct strikes from lightning without causing significant damage or disruption to turbine operations. Like other aspects of wind turbine design, lightning protection devices have improved dramatically in the last few years. Here is a short description taken from a V90 technical brochure:*

*“The V90 Wind Turbine is equipped with Vestas Lightning Protection, which protects the entire turbine from the tip of the blades to the foundation. The system enables the lightning current to by-pass all vital components within the blade, nacelle and tower without causing damage. As an extra safety precaution, the control units and processors in the nacelle are protected by an efficient shielding system.*

*The lightning protection is designed according to IEC 61024 – “Lightning Protection of Wind Turbine Generators”. Lightning detectors are mounted on all three rotor blades. Data from the detectors are logged and enable the operator to identify which one of the blades that were hit, the exact time of the stroke, and how powerful the lightning was. These data are very useful for making a remote estimate of possible damage to the turbine and the need for inspection.”*

10. How will ice throw from the blades be handled? What provisions are proposed to minimize icing?

*Regarding operation of the turbines during icing conditions, icing has been considered when the turbines were designed. There is no problem. Many wind farms operate in mountainous and/or extreme cold weather regions, where significant icing occurs. The turbines are designed to operate in these cold weather conditions.*

*It should be noted that blade surfaces, for aerodynamic efficiency, are extremely smooth, which helps minimize ice buildup. The snow and/or ice is shed from the blades due to melting, winds, flexing of the blades, and/or the slickness of the surface of the blades.*

*Thrown ice is not expected to damage the surrounding vegetation. Regarding the danger to people who may be in the area, access to the sites will be limited. Wind farm workers will be trained to deal with ice and the general public will be warned of potential danger with prominent signage located at main entrance points. (See response to question #13 on restricting access to the site).*

11. The Maine Public Utility Commission's January 2005 report discussed wind farms located over 4,000 feet in elevation may be subject to increased icing and wind speeds. Does the elevation at Redington, and to a lesser extent, Black Nubble, affect the proposed Redington Wind Farm? If so, to what extent, and what is proposed to address this?

*Elevation and wind speed tend to be positively correlated. Based on experience at other wind projects, the meteorological data collected at the MMP project, and meteorological forecasts, we expect that trend will be observed at the MMP project. Thus, on average the turbines located at the higher elevations will tend to produce more power than the turbines at lower elevations.*

*In addition, elevation and icing are also expected to be positively correlated. However, as mentioned above, the turbines to be deployed at the MMP project are designed to withstand icing. This is typical of mountain turbine installations, and wind turbines are successfully operating in numerous high-elevation sites and extreme cold weather sites in the US and around the world.*

*Closer to Maine, icing was studied in Vermont at Searsburg (the only current large wind farm in New England) and at past installations on Little Equinox. Both installations proved that wind turbines can successfully operate in mountain environments.*

*Our energy output calculations include expected downtime and energy losses due to icing. Despite these anticipated energy losses, the output of the MMP project is expected to be sufficient to be economically viable.*

*Vestas has evaluated the elevation and weather conditions at the Redington site and confirmed the turbines will operate at the elevation and weather conditions which are within the general specifications of the turbines. The given site conditions are expected to be within these specifications the majority of time. However, there may also be instances, for example in the case of heavy icing, in which the turbine may be shut down.*

12. *Stump dumps.* The stump dump along the access road to Black Nubble is shown as being above 2,700 ft. elev. on the site plan, and also in an area with a steep slope. However, the notation on the site plan says the stump dump would be below 2,700 ft. elev. Please show the actual location of the proposed stump dump. If above 2,700 ft., please consider relocating it to a site below 2,700 ft.

*The Stump Dump Locations Map, located in Section 18, Appendix 18.1 of our permit application, shows the two stump dumps in their correct locations and both are below 2,700' and on relatively flat ground.*

13. Will the access roads be gated all the time, during mud season, and/or winter? If so, please clarify which portions would be gated, and where the gates would be.

*Our mountain roads will be gated all year to prevent non-MMP motorized vehicle access. The final location of the gates will be determined during construction. In addition, it is International Paper's (now SFT?) practice to close their gate on the IP Road (the main access point for our project) during the winter and "mud season".*

14. *Forest management activities.* The application appears to contradict itself in several places in regard to proposed management of the undisturbed forestland on the parcels. Will there be any forest management activities on the undeveloped land? Assuming the parcels will be in tree growth tax status, this will require a timber management plan and a cutting cycle. Given that a Forest Operations Permit was issued by LURC for timber harvesting on Black Nubble above 2,700 feet several years ago, how much acreage of the two parcels contain marketable timber?

*The property, which is currently owned by Redington Mountain Windpower LLC, is in tree growth tax status. Attachments 10 and 11 contain copies of the current Forest Management Plans for Black Nubble and Redington respectively.*

*To summarize:*

*The Redington Mountain forest management plan identified over 462 acres or 2,900 cords of marketable wood that should be cut by the landowner within the next ten years. Some of the timber could potentially be harvested during the clearing which will occur during the construction of the wind farm.*

*The Black Nubble forest management plan identified re-growth here from previous logging. No cutting is recommended in this area for another 50 years.*

15. Has any consideration been given to placing the undeveloped portions of the two turbine parcels under a conservation easement?

*The permit applicant MMP is leasing the site from Redington Mountain Windpower (RMW), the landowner. MMP understands that RMW has no plans to place the parcels under a conservation easement.*

16. Please explain the log yard at the end of the existing access road to Redington Mountain shown on the site plan. Is it an existing yard, and if so will it continue to be used, by whom, and for what? For example, will it continue to be actively used for harvesting activities during construction of the wind farm? The log yard is shown on

the site plan along a gray line, which the legend says is an alternative road route. Does any portion of this road exist right now?

*The log yard identified on our project map was shown for identification purposes only – the project will not utilize this area. The log yard, formerly used by Dallas Corporation, is no longer active and will not be used by Maine Mountain Power during construction of the wind farm.*

*The gray line is an existing logging road labeled RE6a on the base map. This was under consideration as an access route to the wind farm. This route was not utilized, however, as the selected access route has less visual impact and no stream crossings.*

17. Are any other uses of the 1000+ acre project parcels planned, for example recreational uses under agreements or coordination with ATV or snowmobile groups?

*The permit applicant, MMP, is leasing the site from RMW, the landowner. MMP understands that RMW has no current plans to sign agreements with groups for recreational use on the proposed D-PD site. MMP further understands that RMW plans to explore all recreational opportunities that do not interfere with the safe and economical operation of the wind farm.*

18. *Water Use.* We recently discussed that large amounts of water for concrete production and dust control may be needed. Although the final details of this would be included in a Final Development Plan Permit application, you should assess this for the Preliminary Development Plan enough to determine if large quantities of water (quantify if possible) will indeed be needed, for how long, and if the sources available would be adequate without adversely impacting the waterbodies.

*Our initial investigation into water use has concluded that our water needs are modest enough not to create significant concerns for the local waterbodies. This conclusion was reached after reviewing our water needs with Dan Locke, Hydrogeologist, Maine Geological Survey. Dan's email dated April 4, 2006 on the project's water use is available in Attachment 12.*

*The water needs estimate spreadsheet, including representative monthly consumption, can be found in Attachment 13.*

19. *Geotechnical borings.* You recently mentioned that additional geotechnical borings may be necessary to continue the assessment of the sites for the turbine foundations. Last fall, LURC staff determined that the borings you proposed were a Level A mineral exploration activity, which is an allowed use in a P-MA Subdistrict, and issued Advisory Ruling AR 05-045, acknowledging that the borings are a necessary part of the investigations to plan the project. For the additional borings, please send a letter describing what you propose and staff will assess whether the activity will qualify as a Level A mineral exploration activity.

*Three geotechnical borings were performed on Black Nubble in the fall of 2005. MMP is considering doing additional geotechnical borings prior to receiving a LURC permit. Once a final determination has been made on the details of the borings, MMP will send a letter to LURC, describing the details, and request approval for the activity.*

20. *Scenic impact analysis.* Most of the photo-simulations in the application appear to be on a hazy day. Is there anyway to change the simulated photos to show the views of the turbines on a clearer day? Also, why did the scenic impact analysis not include the nighttime lighted towers, just the daytime views?

*The photos utilized for the simulations were taken by various people at various times during the year on the clearest and best photo days possible. In some instances, the photographer had to wait weeks for a day clear enough for these photographs. The weather, cloud patterns, and atmospheric haze depicted in the photographs are typical of conditions with clear weather in the area.*

*For a representation of how distance plays a role in “haziness”, it is useful to look at Visualization 6-7C in Section 6 – Appendix B of the permit application. In this visualization, we have simulated the turbines in the distance, but the Stratton Biomass plant, about 4 miles away from the viewer, is not a simulation and has not been altered. From the viewpoint on Eustis Ridge the Biomass Plant is within the mid-ground viewing distance of approximately 4 miles and demonstrates the effect of atmospheric haze and distance on objects within the viewshed. For example, compare the biomass plant with the very clear house in the immediate foreground. When compared to the turbines (which are nearly twice as distant) it is evident that the turbines would be even less clear than they are currently depicted.*

*Simulations viewed on different computer screens or using different quality paper will look different.*

*The scenic impact analysis included only daytime views because those are the characteristic views people are used to seeing and are the views customarily required in Maine scenic impact analyses. Nighttime simulations are not required by Chapter 315, DEP Regulations. Additionally, the substantial majority of view experience of the project will be daytime viewers.*

21. *Clearing and soil disturbance*

- A. Why does clearing for the mountain top roads need to be 90 feet wide, and the clearing for new access roads 60 feet wide? Can this be further minimized? Will the shrub layer be left intact?

*The total clearing required is dictated by the need for a relatively flat road with a 32 foot travel surface for equipment plus additional width for slope stabilization.*

*The total cleared width varies with the type of slope stabilization selected in any area.*

*The 90' and 60' widths cited in the permit application assumes riprap slope protection is used on all steep cut slope and fill slopes, which is the worst-case scenario. However, narrower slope treatments such as rock cuts, soil nail walls, reinforced slopes and gabions will also be used to further minimize clearing width.*

*More detailed design will be available in the final permit application.*

*The shrub layer will be disturbed within the area being filled and graded. Outside of that area, the shrub layer will be left intact.*

- B. What are the actual proposed road widths during construction, and after re-growth of vegetation? This is not exactly clear in the application.

*During construction the proposed road width is 32'. During operation, MMP intends to reduce the width of the travel surface to 12 feet. The C-Series drawings in Section 1 of the permit application appendices contain notes explaining the before and after road widths. Specifically, refer to drawing C-20, Appendix 2.2 in Section 1, which gives details on the widening of the curves, the typical road widths and the post-construction vegetation details.*

*As described on the key facts table, MMP will be clearing approximately 115 acres for new mountaintop and access roads, of which over 50% will be re-vegetated after construction. The final road design, which will be submitted as part of the final permit application, will provide road width and erosion control measures for the entire length of these roads.*

- C. Will compaction or disturbance of mountain top soils during construction in areas such as the crane pads inhibit re-growth, and/or cause increased erosion, such as occurs along mountain or coastal trails where there is a thin layer of folist soils?

*During construction, crane pad areas will be surfaced with gravel materials for stability of construction equipment and temporary erosion control measures will be in place to prevent erosion. Once these areas are no longer needed, the top 4 to 6 inches of gravel will be loosened, a 4-inch-thick layer of erosion control mix will be placed over the top of the gravel area, and the area will be allowed to re-vegetate over time.*

- D. Will areas cleared and flattened (i.e. the crane pads, roads, etc) during construction be permanent or be re-vegetated? If these areas are to be re-vegetated, is seeding with conservation mix proposed, or would these areas be allowed to re-vegetate naturally? If the natural re-vegetation process does not

proceed in a reasonable amount of time, what measures would be taken? Even if re-vegetated, the habitat value of these areas would be degraded. Re-vegetation of disturbed areas with native tree and shrub species such as balsam fir, in combination with erosion control mix and/or wood chips and high elevation native graminoids or other herbaceous species should be considered in the event that natural colonization does not occur. If a discussion of this is included in the application, please indicate the section(s) and page number(s).

*Areas cleared and flattened for crane pads and road areas beyond the 12-foot permanent travel width will be allowed to revegetate over time. This revegetation will be promoted by loosening the top 4-6 inches of gravel and placing 4 inches of erosion control mix in these areas. The applicant will review these areas and, in the event revegetation is limited or not occurring, would implement additional measures to promote the growth of native tree and shrub species.*

- E. Please explain if clearing or trimming of trees will need to be done over time to maintain the wind resource.

*No tree-trimming is planned to maintain the wind resource.*

*The center of the wind turbine blades are situated at a height of 80m (263') above the ground level, whereas the tree canopy varies from 5-30 feet above ground level. Since the blades are 44m (144') long, the blades will be approximately 120' above the tree canopy, above most all ground induced turbulence. The existing short trees will have no measurable effect on the wind resource or the turbines at this height.*

- F. If a turbine foundation would be approximately 15 feet in diameter, why would the turbine pads need to be 160 feet long? Why does the crane pad need to be an additional 240 feet long? Can either of the pads be smaller? Is there one 240 foot long crane pad at each turbine site? Are the crane pads permanent, and if so, why is this necessary? Please clarify how large the turbine pads will be, how large and where the crane pad(s) will be, how large the cleared areas for each turbine will be, and how much of each area will be allowed to re-vegetate. Section 7 says the clearing for each turbine will be 1/3 to 1/2 acre, and some of that area will be allowed to become re-vegetated. A drawing describing this would be the best way to illustrate, rather than text. The application seems to say several different things, and it is confusing. Also clearly state how the size of the openings has been minimized to the greatest extent possible, and what limits them from being further reduced in size.

*The Application, Section 1 "Development Description", Key Facts Table, page 5, describes 30 turbine pads and 3 crane assembly pads. Each turbine pad area is described as being 0.41 acres in size and each crane assembly pad area as being*

*0.28 acres in size. Both of these figures include the pads themselves and the cleared area around the pads. As has been noted, the final designs are not complete. These figures should be considered as average, some turbine pad areas could be larger and some smaller depending on the final designs (0.41 approximately the average of the range “1/3 to 1/2 acre” noted above in the question). The same is true for the three crane assembly pad areas.*

*The turbine pads need to be approximately 160 feet long by 50 feet wide to allow room for the turbine foundation, the crane, the staging of turbine components and the assembly of turbine components. Because the blades, for example, are approximately 144 feet long, there must be sufficient area to stage the blades and lift them into place at the top of the turbine tower. As noted above, in addition to the pad there is a cleared area around the pad.*

*The size of the three crane assembly areas must be longer than the typical crane pad because the turbine towers are 80 meters (263 feet) tall and the crane boom must be even longer. The crane assembly areas must be large enough to allow room for assembly of the large erection crane. The crane assembly areas need to be an additional 240 feet long by 25 feet wide at one end of the turbine pad to provide a 400-foot-long assembly area for the erection of the crane. Similar to the turbine pads, there is some additional cleared area around the crane assembly pads. Both the turbine pads at each turbine location (30 turbine pads) and the three crane assembly areas cannot be reduced in size as this amount of area is needed to safely assemble and erect components of the project. The cleared areas around the pads will vary depending on the specific layout of the final design. To minimize impacts after construction the surface treatment at all turbine pads and crane assembly areas will be allowed to revegetate as noted in C and D above. Refer to drawings C-2, C-3 and C-6 in Section 1 of the Application for drawings showing the approximate locations of the turbine pads (the turbines and the crane pads) and the crane assembly areas.*

*Please note that MMP has not finalized the turbine foundation design but it is probable that while the exposed above grade foundations will be about 15 feet diameter, the below grade foundation will be on the order of 65 feet in diameter. Presently, three different designs are being considered and the final design will be dependant on the boring results and the engineer/contractor designers. The Patrick & Henderson design is no longer the preferred design. It is more likely that the gravity type or spread footing design noted in the Application Appendix 7, will be installed for the MMP turbines. Also please note that the information supplied in Appendix 7 for the gravity type spread type foundation is for the Vestas V80 turbine. The Vestas V90 turbines will require gravity type spread footing foundations with a diameter of about 65 feet.*

*MMP will not over design the turbine pads, the crane assembly pads or the roads as this unnecessarily affect the environment and incurs additional cost. To minimize the size of these areas just-in-time delivery of components (minimal*

*storage required), single blade erection, and co-location of crane assembly areas with turbine pads are being employed.*

- G. What about the graded/blasted areas to be used during construction? Will these areas be re-vegetated?

*All areas not needed for routine operations and maintenance will be re-vegetated. Operations and maintenance requirements are detailed in other responses.*

- H. The application mentions a “lay down yard near the site entrance”? Please show the location on the site plan. How large would this area be? How much clearing and grading would be needed, and would this area be re-vegetated after the project is constructed?

*Several locations are currently being investigated for a “lay-down yard”. There are several potential locations for this site near the entrance to the project (the IP Road). Locations being considered are flat and level sites approximately 3-5 acres in size, so no new or grading would be required. We are trying to select an existing cleared site for this purpose. The final site has not been identified yet.*

22. *Wildlife studies.* Please summarize the dates and results of the raptor (eagle or hawk) migration studies for the project area done since 1994, and any post-construction studies planned for these species.

*No raptor surveys occurred after 1994. The 1994 survey results identified 18 raptors over a 64 hour study period – which represents .28 raptors per hour. This is much less than identified at other sites. The field surveys conducted in 2002 were for songbirds (specifically Bicknell’s thrushes). At this time, no post-construction studies are anticipated for migrating raptors. Any post-construction mortality studies would, of course, include reporting any raptor mortalities, should they be found. However, raptors form by far the smallest documented mortality at modern wind farms located outside of the Altamont, California. In fact, barely more than a dozen raptors have been found during more than 15 mortality studies in the east, mid-west, and non-California west in the past 6-8 years. As the risk to raptors is extremely low, no daytime observations of raptor migration relative to the turbines are planned.*

23. *115 kV utility line.* Why does the 115 kV line, after it leaves the Nash Stream substation, first head northwest to the township line, and then jog back eastward along the township boundaries? Wouldn’t it have been shorter to cut directly across (the hypotenuse) toward the township boundary instead?

*The path chosen for the 115 kV power line utilizes lower elevation terrain, minimizes wetland exposure and visual impact, and was specifically designed to lie on the outskirts of property ownership boundaries (as requested by the property owners). Cutting directly across the property from the substation would have involved*

*traversing some rough terrain (much of it above 2,700'), and have greater visual impact.*

24. *Proposed administrative structure of the D-PD Subdistrict.* The 1000+ acres in the two ridge top parcels will comprise the D-PD Subdistrict to which the section of the application entitled “Subdistrict - Uses Allowed” applies (Section 1, page 43).

A. Uses allowed with a permit

Although the turbines were not included in the proposed “activities requiring a permit”, I assume this was an oversight. Please include the number of turbines, and general dimensions. Other activities listed in this section should include the underground and above-ground (if within the D-PD Subdistrict) utility lines and associated equipment, Levels B and C gravel access roads, the two reference towers, replacement structures, new structures, and turbine lighting per FAA requirements (which would be in excess of LURC lighting standards in Section 10.25,F).

As I understand it, the proposed maintenance building, lower elevation project access roads, utility line access roads, above-ground utility lines, substation, two stump dumps, and gravel pits will all be outside of the D-PD Subdistrict. Please verify.

*The proposed maintenance building, lower elevation project access roads, utility line access roads, substation, two stump dumps, and gravel pits are outside of the D-PD Subdistrict. Most above-ground utility lines will be outside of the D-PD Subdistrict; however, the 34.5kV lines from the two mountain peaks may start within the proposed subdistrict. The exact location of the transition from the collector (underground) system to the above-ground transmission line will be determined during final design. In addition, during the construction period, the project will temporarily site a concrete batch plant in the Management (M-GN) zone. Maine Mountain Power is reviewing locations with the landowners for sites that have been cleared, have no wetlands and are within a 45 minute drive from the wind farm construction site. The specific location of the batch plant will be identified in our final development plan.*

***We had included the turbines in our original application, but it may have been unclear. We therefore request that the following text replace the entire section of text entitled Uses Requiring a Permit in the Development Description in Section 1, pages 43-45:***

a) *Wind Turbines and Foundations;*

*A total of 30 Vestas V90 turbines are proposed for the Redington Wind Farm, 18 for Black Nubble and 12 for Redington. Each turbine tower is 13 feet in diameter at the base, tapering to 7.5 feet at the top. The height of the towers will be 80 meters (263 feet). The nacelle is the housing for the generator located at the top of the tower where the blades connect to the hub. The blades*

are 144 feet long. Each of the 30 turbines requires an individual foundation. Each turbine will be located in a 160' x 50' cleared area next to the mountaintop access road. Clearing the site will require excavation and/or blasting. See Appendix 7 at the end of this section (Wind Turbine Foundation Details) for a description of wind turbine foundation construction.

b) *Meteorological Reference Towers;*

Two 80-meter tall permanent wind measurement "reference" towers will be located on the westernmost part of each mountain. A reference tower provides valuable feedback on the performance of the wind farm and the turbines. It is a tool utilized to determine if the wind turbines are functioning properly and producing the correct amount of electricity.

The reference towers will be installed early in the construction of the project in front of two selected performance test turbines (one on Black Nubble and one on Redington Mountain). Also at the same time, two 80 meter temporary meteorological towers will be installed, one at the site of each performance test turbine. Over a period of months (before the turbine foundations are poured) the tower pairs will be used to "calibrate" the wind conditions at each tower. This means that the temporary towers will be used to determine conditions at the test turbine. After sufficient data is obtained, the temporary towers will be taken down and the turbines erected. Then as soon as possible after the turbines are commissioned, turbine performance will be determined using the relationships determined during the calibration period. Finally, the permanent tower will be used on a continuous basis during operations to monitor turbine performance.

c) *Level C road construction projects;*

Approximately 8.5 miles of new gravel mountaintop roads connecting the turbine sites are within the proposed D-PD. 2.8 miles of the 3.1 miles of new gravel access roads to the proposed D-PD are above 2700 feet. See the Road Design narrative (See Appendix 2 at the end of Section 1).

d) *Level B road construction projects;*

Upgrades to gravel roads to accommodate maintenance vehicles should there be a need to replace sizeable components of the turbines.

e) *Water crossings of minor flowing waters;*

Temporary bridges will be built as necessary to cross wet areas during construction. Existing roads currently have bridges over all major water crossings. Smaller crossings are addressed in the Road Design narrative at the end of Section 1.

f) *Underground utility lines;*

An underground 34.5 kV collector system will be installed under the roadway in the proposed D-PD site on both mountains. Power line details are available at the end of Section 1 in Appendix 5.0 - Electrical System.

g) *Above ground utility lines;*

A small portion of the 34.5kV line may be constructed within the D-PD. The exact point where the underground collector system transitions to the above-ground utility line will be determined at final design. Skidders will bring

*utility poles to the site during construction and small excavators will be used to bore holes.*

*h) Turbine Lighting;*

*Lighting for nighttime navigation will be installed on the nacelles of 15 wind turbines in compliance with FAA regulations. The roof section of the nacelle is equipped with a skylight, which can be opened to access the lights. See the FAA Lighting Map (Attachment 7) with this memo for indication on turbines requiring lights. No daytime lights are required.*

*i) Filling and grading for wind turbines, roads and the underground electrical collector system;*

*j) Portable toilet facilities during construction;*

*Several portable toilets will be located on the D-PD site during construction. After construction, toilet facilities in the maintenance center will be sufficient.*

*k) Forest Maintenance:*

*MMP anticipates forest maintenance activities consistent with the Forest Management plans attached to this document.*

*l) Replacement structures;*

*MMP may need to replace structures should there be a malfunction after installation. Should there be a need to replace any of the larger components of the wind turbines, roads may be widened temporarily to allow trucks to pass through safely. Erosion control procedures will be implemented after maintenance in the same manner as during the initial construction.*

*m) Other structures;*

*1. The three crane assembly areas require an additional 25'x240' cleared area adjacent to crane pads at the first turbine site at the beginning of each mountain's access road to accommodate temporary material storage and for assembly /disassembly of the lifting cranes. Once assembled, the cranes can then be driven to other turbine sites along the mountaintop roads.*

*2. Structures required for any post-construction wildlife monitoring.*

**B. Uses allowed without a permit, subject to standards**

For project maintenance after construction within the D-PD Subdistrict, please include a short description of the forest management activities, and maintenance activities that would require soil disturbance.

Other activities to include in this section could be: (1) solid waste and brush disposal within roadways (per DEP's State-wide standards as well as LURC's standards?); (2) Level A mineral exploration activities [mention work done prior to permit approval – reference AR 05-045]; (3) Level A road projects; and (4) direction/informational signs [Use language in Chapter 10, Section 10.27,J for such signs].

***The following text replaces the entire section of text entitled Uses Allowed Without a Permit Subject to LURC Standards in the Development Description in Section 1, page 45:***

- a) *Level A road projects (for both the D-PD and M-GN);  
Mountaintop roads will be constructed to withstand heavy loads during construction and maintenance. In addition, existing primary roads, access roads and bridges in the lower M-GN subdistrict will be upgraded for these loads. Construction activities in M-GN will include replacing culverts, resurfacing and repairing bridges. See the road and bridge construction documents in the appendix of Section 1 for details.*
- b) *Directions and information signs listed as exempt in Chapter 10.27,J;  
1d) Traffic control signs or devices  
1e) Signs displayed for the direction, instruction or convenience of the public. Specifically, MMP will post signs warning of potential icing events at mountaintop road entrances.*
- c) *Level A mineral exploration activities;  
Exploratory pits and test borings will be dug or drilled to determine the composition of underlying soils for design and siting of turbine foundations and roads. This activity has begun subject to LURC's Advisory Ruling AR 05-45 dated September 30, 2005.*
- d) *Mineral extraction;  
Gravel requirements to generate the material needed for the surface of the roadway are described in Section 18 of this application, Solid Waste. Gravel pits are all below 2700' and are identified on the Project Base Map.*
- e) *Solid Waste and Brush Disposal Within Roadways  
MMP proposes to grind a portion of the stumps and brush and use the grindings behind silt fences, and to bury the remaining stumps at the two stump dump locations each 2 acres in size. The volume of stumps, grubblings, and chipped vegetation, which will be generated by the project, is available in Section 18 of this application. Stump Dump Locations (all below 2700') are identified on the Project Base Map. Other Solid Waste disposal plans are outlined in Section 18.*
- f) *Project site maintenance;  
After construction, much of the roadway will be allowed to re-vegetate. Periodically (and after storms) there will be scheduled clearing of growth on road travel surfaces and utility corridors. MMP's erosion plans include re-inspection of new and reconstructed access roads after the first significant rainfall. Any eroded areas will be repaired. Subsequent inspections will be made for four significant rainfall events.*

**C. Uses allowed without a permit**

**Wildlife management activities approved by LURC (not by RMW), i.e. radar or other studies, including minor clearing to place equipment and small equipment storage structures, and poles to elevate bat radar equipment.**

**The following text replaces the entire section of text entitled *Uses Allowed Without a Permit* in the Development Description in Section 1, pages 45-46:**

- a) *Emergency operations for wind farm contractors during construction and maintenance;*  
*Upgrading existing logging roads and constructing new roads will improve emergency access to areas within Redington Township. Emergency assistance will be provided by town fire and emergency teams from Stratton and Rangeley.*
- b) *Forest management activities as approved by LURC;*  
*Activities will be limited to clearing and maintenance of accessways at the wind farm and clearing areas for soil borings, equipment for wildlife monitoring and any other wind farm related studies.*
- c) *Motorized vehicular traffic on roads and trails, and snowmobiling authorized by RMW;*  
*During construction, there will be periods of employee travel and heavy equipment transport. When the wind farm is operational, typical public highway traffic will be five to ten maintenance personnel traveling to the maintenance center for routine operations. Wind farm maintenance staff will use the network of private logging roads and new extensions to the mountaintops, not public roads.*  
*In the winter, snowmobiles or snow-cats may be the only way to access the wind farm and power lines for routine or unscheduled maintenance. Adequate parking and storage for snowmobiles and ATV's will be available at the maintenance center.*
- d) *Surveying and other resource analysis approved by LURC;*  
*Wind studies will be conducted periodically.*

D. The proposed D-PD Subdistrict should include the activities that are proposed, or restricted, within any of the wetlands mapped by Woodlot Alternatives. The forested wetland identified as habitat for the Northern Bog Lemming is a P-WL1 Wetland because it contains significant wildlife habitat. This wetland and the proposed 250 foot buffer should be designated as not to be disturbed. While the Bog Lemming was not specifically found within the other forested wetlands mapped within the D-PD Subdistrict (which lacking that species would be P-WL3 wetlands), for management purposes all forested wetlands within the D-PD Subdistrict on Redington Mountain and Black Nubble should be treated the same because they support potential habitat for the Bog Lemming. Please consider these comments about the wildlife habitat as preliminary, pending further comment by the state and federal wildlife wetland and agencies.

*In the proposed D-PD subdistrict, three small wetlands on the ridgeline of Redington Mountain will be designated as “not to be disturbed” for any activities associated with the wind farm project.*

*The 250-foot buffer surrounding these wetlands, described in Section 10, will also be designated as “not to be disturbed” with the exception of 400 feet of roadway located along the western edge of the buffer area (see map in Figure 10.1 of Section 10). This 400 foot impact has been deemed unavoidable, as no other locations for the roadway exist within the project lease area that would not require significant cut-and-fill slopes on steep topography. During the design phase of the project, one turbine (turbine 7) and over six hundred feet of access road were moved out of the buffer zone, and another turbine was eliminated to protect this area from disturbance.*