

**STATE OF VERMONT
PUBLIC SERVICE BOARD**

Docket No. 7156

Petition of UPC Vermont Wind, LLC for a Certificate of)
Public Good pursuant to 30 V.S.A. section 248,)
authorizing it to construct up to a 52 MW wind electric)
generation facility, and associated transmission and)
interconnection facilities, in Sheffield and Sutton, Vermont,)
and operate the same.)

**PREFILED REBUTTAL TESTIMONY OF
JEFFREY A. WALLIN**

ON BEHALF OF UPC VERMONT WIND, LLC

September 25, 2006

Summary:

Jeff Wallin's rebuttal testimony responds to issues related to impacts on large mammals raised by Dr. William Kilpatrick, on behalf of Universal Health Services and Ridge Protectors, as well as concerns raised by Mr. John Austin, on behalf of the Agency of Natural Resources.

1 **Q. What is your name, occupation, and business address?**

2 Response. My name is Jeffrey Wallin. I am the Founder and sole proprietor of
3 Multiple Resource Management, Inc, a firm that specializes in wildlife consulting.
4

5 **Q. Have you previously prefiled testimony in this case?**

6 Response. Yes, on behalf of the Petitioner UPC Vermont Wind, LLC
7

8 **Q. What is the purpose of your rebuttal testimony?**

9 Response. The purpose of my testimony is to respond to issues related to large
10 mammals raised by Dr. William Kilpatrick, on behalf of Universal Health Services
11 and Ridge Protectors, as well as concerns raised by Mr. John Austin, on behalf of the
12 Agency of Natural Resources.
13

14 **Q. What materials have you reviewed and other activities have you undertaken in
15 preparing your rebuttal testimony?**

16 Response: I have reviewed the prefiled testimony and discovery responses of Dr.
17 Kilpatrick, as well as the prefiled testimony of Mr. Austin. I have also conducted
18 additional field work on the project site.
19

20 **Q. Please describe the additional field work you undertook.**

21 Response. Based on questions and concerns raised by the Agency of Natural
22 Resources, we have conducted additional studies on the Project site to evaluate and
23 delineate the location of scarred beech trees and wetlands for black bear, and moose

1 winter concentration areas. We have also conducted a thorough evaluation of
2 potential habitat impacts associated with changes made to the Project. As outlined
3 further below, these changes have reduced the Project's potential impacts on large
4 mammals.

5

6 **Q. Do you have any new exhibits?**

7 Response. Yes. I have prepared a map indicating the extent of all our evaluation for
8 important bear habitat features on the Project site. The map is attached as ***Exhibit***
9 ***UPC-JW-Reb1***. I have also attached data obtained from the Vermont Department
10 of Fish and Wildlife (VDFW), which provides further information on historic and
11 current bear population levels. This information is attached as ***Exhibit UPC-JW-***
12 ***Reb2***.

13 In response to concerns raised by Dr. Kilpatrick and Mr. Austin, I have also
14 included two reports on the results of photographic wildlife inventories conducted in
15 2005 and 2006 in the vicinity of the Searsburg Wind Farm in Southern Vermont.
16 These studies were conducted on behalf of a separate client, who has recently given
17 permission to release the studies. The 2005 study is attached as ***Exhibit UPC-JW-***
18 ***Reb4a*** and the 2006 study (an ongoing study) is attached as ***Exhibit UPC-JW-***
19 ***Reb4b***. I have also included a copy of the 1995 noise analysis for the proposed
20 Searsburg Wind Farm, which provides evidence on the predicted noise levels at the
21 location of the camera study. ***Exhibit UPC-JW-Reb5***. This material, together with
22 my photo studies, rebuts claims that noise levels near the project will preclude use of
23 the area by bear, deer, moose, or other wildlife. I have also included a photograph of

1 a moose immediately adjacent to a wind turbine, as additional evidence on this point.

2 ***Exhibit UPC-JW-Reb3.***

3 Finally, in response to questions concerning bear corridors, I have provided
4 printed copies of maps from the Vermont Department of Fish and Wildlife bear
5 database for the towns of Sheffield and Sutton, which indicate that there are no
6 documented bear travel corridors adjacent to the Project site. These maps are
7 attached as ***Exhibit UPC-JW-Reb6a and 6b.***

8

9 **Q. Dr. Kilpatrick has criticized your methodology for evaluating the Project's**
10 **potential impacts on large mammals. Please describe the methods you used for**
11 **evaluating the Project's potential impacts on wildlife.**

12 Response: Our original investigation of the Project site included a search of the
13 potential impact areas, defined as the 300-foot radius around proposed turbine
14 locations, and 100 feet around proposed roads. A number of project changes have
15 been proposed in response to concerns raised by parties in these proceedings,
16 including the Agency of Natural Resources. Through consultation with ANR, we re-
17 evaluated the habitat within a 600-foot radius of the project infrastructure, the south
18 face of Libby Hill (as the orthophoto suggested potential beech habitat), and looked
19 at other headwater areas for the potential of forested wetlands. Additionally, all of
20 the remaining Meadowsend property was surveyed for necessary habitats for deer,
21 bear, and for moose winter concentration areas. The survey of the area within the
22 600 foot radius was searched intensively, as previously described, in an effort to map
23 all BSB within those locations. Outside of the 600-foot area, we used a standard

1 reconnaissance procedure to identify and evaluate other potential habitat areas. This
2 reconnaissance procedure involves use of an orthophoto to identify habitat blocks
3 (hardwood vs. softwood) and visual examination of the habitat blocks for necessary
4 habitats (hardwood blocks for BSB, softwood blocks for winter concentration areas).
5 We then conducted an intensive assessment of the re-configured Project, building on
6 our previous assessment. This search includes a 600-foot-wide survey area around
7 the new preferred access road, which enters the Project area from the west. As
8 indicated on *Exhibit UPC-JW-Reb1*, we have searched approximately 3,250 acres
9 of the Project site for important habitat features for large mammals, including deer
10 wintering areas, moose winter concentration areas, bear scarred beech, and bear
11 wetland habitats. The approximate boundaries of our search area are shown on
12 *Exhibit UPC-JW-Reb1*.

13
14 **Q. How does your method of analysis compare to the generally accepted method**
15 **of wildlife assessment for permit review in Vermont?**

16 Response. In my experience, the reconnaissance procedure is the standard
17 evaluation method for review of development projects in Vermont. Gross cover
18 type maps, i.e., orthophotos, are reviewed, suspected necessary habitats are
19 interpreted, and a field review is conducted, typically with the aid of a geo-
20 referencing device. Formal transects are not walked, but rather the habitat is
21 adequately covered to ensure that necessary habitats were not missed. When
22 encountered, necessary habitat boundaries are usually mapped. This would typically
23 include the outer boundary of a beech stand exhibiting bear scarring, and not each

1 individual tree depicting scarring. In the case of deer winter shelter, if the boundary
2 of the shelter follows the edge of the softwood cover, delineation will be taken
3 directly from the orthophoto; otherwise it will be delineated with mapping grade
4 GPS equipment. I employed this procedure during my 12 years as a Game Biologist
5 with the Vermont Department of Fish and Wildlife (using standard aerial photos and
6 no GPS) and the 23 years since as a wildlife consultant.

7 I employed this reconnaissance level survey methodology in my habitat
8 review for the original Searsburg project in 1995. Review of the proposed Searsburg
9 expansion has focused more directly on the exact quantity of BSB and was the first
10 project I worked on where individual BSB were tallied. This involved the more
11 intensive transect technique incorporating the use of geo-referencing data loggers
12 equipped with uploaded background maps. This mapping procedure was requested
13 by VDFW at the Glebe Mountain wind project. We have used this intensive
14 technique in the 600-ft radius search areas around proposed turbine sites on the
15 Sheffield Project to ensure that each individual BSB tree in this area is counted. My
16 firm has mapped literally thousands of BSB with this method at each of the three
17 projects.

18

19 **Q. Dr. Kilpatrick states that it is his opinion that the UPC has failed to conduct a**
20 **sufficiently detailed analysis of the Project's impacts. Do you agree with that**
21 **opinion?**

22 Response: No, I do not. As described above, we have conducted an exhaustive
23 evaluation of the Project site, assessing both those areas that may be directly

1 impacted by the project and areas that may be indirectly affected. Our methodology
2 for reviewing the Project's impacts is entirely consistent with accepted protocols for
3 wildlife impact studies for development projects in Vermont under Act 248 as well
4 as Act 250.

5 Our level of evaluation within the 600-foot radius is far more rigorous than
6 the level of assessment suggested by Dr. Kilpatrick. His insistence on meeting the
7 criteria set forth by the National Inventory and Monitoring Strategic Plan misses the
8 point between plot sampling and total counts. We are not using a random plot or
9 point sampling technique to statistically predict within certain confidence limits the
10 number of BSB on the project site. I have performed such random plot sampling
11 of BSB on an 8 square mile block of habitat at an unrelated site. Here, we have,
12 within practical limits, attempted to count every BSB within the 600-foot radius.
13 When doing random sampling, it is important to follow a protocol such that the
14 study can be replicated. A total count should be easily replicated. I would note that
15 at the time of Dr. Kilpatrick's testimony, he had conducted no analysis or evaluations
16 of the Project site which contradicted my findings. The information developed
17 during our analysis provides sufficient evidence to conclude that the Project will not
18 have an undue impact on deer, moose, and bear.

19

20 **Q. UPC has recently revised the Project layout, in part to address ANR's**
21 **concerns over bear habitat. What is your opinion regarding the impact of the revised**
22 **layout on black bear?**

23 Response. In my opinion, the reconfigured project will have a reduced impact

1 on bear. In response to concerns raised by other parties in this matter, and based on
2 discussions with ANR, a number of changes have been made in the proposed project
3 that are relevant to wildlife impacts. First, the number of turbines has been reduced
4 from 26 to 16, and UPC has made an effort to micro-locate those 16 turbines so as
5 to significantly reduce the total impact on Bear Scarred Beech (BSB). In addition,
6 project access roads have been relocated or reconfigured to reduce impacts on BSB
7 as much as practicable. The original project configuration could have resulted in the
8 removal of 167 BSB across the entire Project site. With changes to the layout, the
9 total impact has been reduced to 38, resulting in a 77% reduction in total impact. We
10 have marked more than 1,460 BSB trees on the Project site as a result of our
11 extensive field analysis. Of the total number of BSB identified on the Project site,
12 only 2.6% will be removed.

13 The reconfiguration of the Project has also eliminated the road impacts on
14 the beaver pond adjacent to Libby Hill, thereby removing the threat of any potential
15 fragmentation of the habitat surrounding that wetland feature. By removing the
16 originally proposed road in this area, the new layout maintains undisturbed habitat
17 for movement across the Libby Hill ridgeline saddle at the beaver wetland, thereby
18 facilitating access both to the wetland itself, and areas on either side of the Project
19 site. Infrastructure from the Project is now approximately 480 feet removed from
20 this wetland at its closest point. Further buffering to the wetland habitat is provided
21 by the vegetation and topographic difference between the wetland habitat and the
22 turbines. As mentioned in my original prefiled testimony, we do not have any
23 evidence of bear using this wetland, and Dr. Kilpatrick likewise did not identify any

1 evidence of use. But if the resource is used by bears, the reconfigured Project will
2 reduce the potential impacts on the beaver wetland.

3 The extent of potential indirect impacts to large mammals from projects of
4 this type is still not fully understood, but evidence suggests that bears, as well as deer
5 and moose, will continue to use the site. As explained further below, camera studies
6 conducted near the existing Searsburg Wind Farm provide evidence that bears, deer,
7 and moose (in addition to wild turkeys, raccoons, red fox, fishers, and coyotes) are
8 using areas immediately adjacent to the wind turbines while they are operating. I
9 have no reason to suspect the same will not be true here.

10

11 **Q. Given the revised Project Layout, do you believe the Project will have an**
12 **undue adverse impact on deer or moose?**

13 Response: No, I do not. No deer winter shelter, a necessary wildlife habitat, was
14 found on the project site, a fact confirmed by John Austin, VDFW. A moose
15 winter concentration area was located and is show on *Exhibit UPC-CRV-Reb4a*
16 *and 4b*. Such cover is not considered necessary wildlife habitat and the impact of
17 the road and turbine locations will have negligible impact on the moose population.
18 I base this opinion on my general knowledge of moose behavior and my experience
19 at the Searsburg project where moose freely use the access road and turbine
20 clearings, benefiting from the browse created by that project. One precaution that
21 must be taken within moose concentration areas, to ensure unrestricted ingress and
22 egress between the softwood shelter and the plowed road, is the creation of snow
23 bank breaks. These allow the moose to access the cover without becoming mired in

1 a high snow bank. The location of breaks in snow banks should be frequent and
2 strategically placed based on moose trail/travel activity within the concentration area.
3

4 **Q. Dr. Kilpatrick suggests that the Project may have an undue adverse impact on**
5 **deer because the wind turbines may create an “acoustically challenging**
6 **environment” for deer. Do you agree with this assessment?**

7 Response. No, I do not. Deer readily acclimate to human activity, and in many
8 instances acclimate in areas where noise levels are much greater than the noise levels
9 projected near this project. Numerous deer yards abut our interstate highway system
10 where noise is loud, varied in pitch and inconsistent (unlike wind turbines). The
11 similarity between the interstate highway and wind turbines, however, is that the
12 location of the noise is always consistent, i.e., always coming from the same black
13 strip of pavement on the other side of the chainlink fence, or from the same turbine
14 and generator on the same pole 300 feet up in the air. The significance of this is that
15 deer can easily adapt to a consistent source of noise.

16 In addition, I have digitally documented numerous deer traveling and feeding
17 regularly within 80 meters of operating turbines at the Searsburg facility in southern
18 Vermont. Camera studies during both 2005 (30-Sept to 6-Nov) and 2006 (April-July)
19 documented 20 deer movement events between the existing turbine string at
20 Searsburg. ***Exhibit UPC-JW-Reb4a and 4b.*** Based on my understanding of past
21 noise analysis of the Searsburg project site, noise levels were predicted to be between
22 54 and 60 dBA at the location the camera is installed. *See Exhibit UPC-JW-Reb5*
23 (1995 Searsburg Noise Study). Based on track and scat evidence, deer are using areas

1 immediately under the turbines, where noise levels are above 60 dBA. Given the
2 photographic evidence of deer use in the area immediately adjacent to the Searsburg
3 facility I do not believe that Dr. Kilpatrick's premise that noise will keep deer from
4 utilizing the areas around turbines is valid. As Dr. Kilpatrick acknowledges in his
5 discovery responses, photo studies are an excellent way to document the use of
6 particular areas by wildlife. In fact, Dr. Kilpatrick used this very method in his
7 evaluation of the proposed East Haven Wind Farm. Deer are clearly browsing and
8 traveling within the area Dr. Kilpatrick alleges to be "acoustically challenging", and
9 using locations even closer to the turbines.

10 Even if Dr. Kilpatrick's premise is accepted, there is no necessary deer
11 habitat within the Project site, including those areas of the site which may allegedly
12 be "acoustically challenging" to deer. This opinion has been confirmed by Mr.
13 Austin's evaluation of the Project site, and Dr. Kilpatrick has as yet not identified any
14 necessary deer habitat in the area he alleges may be impacted. Finally, Dr. Kilpatrick
15 concedes that state and local deer populations are very healthy, and are not in danger
16 of decline.

17

18 **Q. Dr. Kilpatrick also suggests that the wind turbines may have an undue**
19 **adverse impact on moose because they may create an "acoustically challenging**
20 **environment" for moose. Do you agree with this assessment?**

21 Response. No, I do not. As with deer, I have documented moose traveling and
22 feeding within the area surrounding the Searsburg facility in both the 2005 and 2006
23 photo surveys, in addition to tracks and scat directly under the turbines. *Exhibit*

1 ***UPC-JW-Reb4a and 4b.*** Moose are clearly using areas which appear to fall within
2 the 50-60+ dBA range for acoustic impacts. In fact, anecdotal photographs of moose
3 next to turbines suggest that they acclimate to these features, and continue to use
4 areas occupied by turbines. ***Exhibit UPC-JW-Reb3*** clearly shows a moose
5 immediately next to a wind turbine. I personally have observed moose tracks at the
6 Searsburg facility within 6 meters of the turbines.

7 Even if one were to assume that noise from the turbines might prohibit use
8 of habitat within the immediate vicinity of the Project, we have not identified any
9 necessary habitat for moose in those areas. Moose populations in the State of
10 Vermont are stable or rising and are not in risk of decline, and I do not believe that
11 this Project will have any undue adverse impacts on moose, even if Dr. Kilpatrick's
12 assumptions of acoustic impacts were taken to be true.

13

14 **Q. Let's turn to bears. Mr. Austin and Dr. Kilpatrick both express concern over**
15 **the Project's potential direct impacts on bear scarred beech trees. How would you**
16 **respond?**

17 **Response.** As stated in my original testimony, I do not believe the Project as
18 originally proposed would have an undue adverse impact on bear scarred beech
19 trees, or bears. However, based on the agency's concerns, and on concerns expressed
20 by Dr. Kilpatrick, UPC has taken extra efforts to reduce the project's potential
21 impacts on beech trees. First, we have expanded our search of the Project area to
22 provide a broader assessment of bear scarred beech (BSB) trees in the vicinity of the
23 Project, so as to allow relocation of turbines to areas with fewer bear scarred beech.

1 The expanded search area also provides more context for understanding the relative
2 impact of the Project on the beech trees in the vicinity of the Project.

3 As explained above, the total number of turbines has been reduced from 26
4 to 16, and UPC has made an effort to micro-locate those 16 turbines so as to
5 significantly reduce the total impact on BSB. In addition, project access roads have
6 been relocated or reconfigured to reduce impacts on BSB as much as practicable.
7 The original project configuration could have resulted in the removal of 167 BSB
8 across the entire Project site. With changes to the layout, the total impact has been
9 reduced to 38, resulting in a 77% reduction in total impact. Of the total number of
10 BSB identified on the Project site, only 2.6% will be removed.

11

12 **Q. Do you agree that the Project's indirect impacts will prohibit the use of bear**
13 **habitat located ¼ to ½ mile from the Project?**

14 Response. No, I do not. There is admittedly very little scientific evidence on the
15 nature and extent of indirect impacts from wind turbines on bears. However, the
16 evidence that is available suggests that bears readily acclimate to the presence of
17 operating wind turbines, and will continue utilizing resources adjacent to the Project.

18 For example, I have recently documented bear activity within only 80 meters
19 of the operating wind turbines at the Searsburg facility. This activity was captured
20 during remote infrared camera studies conducted in 2005 and 2006 at the Searsburg
21 facility. *Exhibit UPC-JW-Reb4a and 4b.* Photograph K from the 2005 study,
22 which was taken approximate 80 meters from an operating wind turbine (WT7),
23 clearly indicates a bear using the area around the turbine. The turbines in the facility

1 were operating and generating power at the approximate time the photo was taken.
2 On June 11, July 4, and 2 separate instances on July 17, 2006, four more bear
3 crossing events were documented, one involving a female and cub. The most
4 immediate turbine (WT7) was generating on the earlier two dates; wind turbines 6
5 and 8 (opposite sides of WT7) were generating on July 17th. As Dr. Kilpatrick
6 acknowledges in his discovery responses, photo studies are an excellent way to
7 document the use of particular areas by wildlife.

8 In addition to this photo documentary evidence, I have also found
9 approximately one-dozen BSB within 75 to 200 meters from the Searsburg facility,
10 that appear to have scarring that post-dates construction of the facility, indicating
11 that bear foraging activity continues in this area. Additionally, I have found feeding
12 activity within the clearing for a turbine where a bear had torn apart a rotten balsam
13 log to feed on ants, and I have found bear scat on the access road, both within 30
14 meters of a turbine. This evidence supports the conclusions of my previous bear-
15 snag studies of post-construction bear activity at the Searsburg site.

16 There are, of course, likely to be temporary indirect impacts associated with
17 construction of the facility. The extent of these indirect impacts is not known, but
18 bears, moose, deer and other mammals may avoid the Project site during
19 construction. However, the evidence that is currently available does not suggest that
20 these indirect impacts will continue once construction is completed. It is my
21 professional opinion that bears will acclimate to this facility after construction and
22 will continue traveling and utilizing habitat resources in close proximity to the facility
23 during operations, as appears to be the case at Searsburg.

1

2 **Q. Do you agree with Dr. Kilpatrick's appraisal of the bear snag study?**

3 Response. Certainly not. Dr. Kilpatrick appears not to grasp the purpose of the
4 study. Dr. Kilpatrick's PFT states on page 18 that: "Wallin's experiment (1998) was
5 designed to measure the number of bears that traversed the area between the lower
6 and upper fences." Nowhere in the study report is that stated nor does it come close
7 to reflecting the purpose of the study. VDFW expressed concerns over the
8 Searsburg project because of potential disruption of an identified VT Route 8
9 corridor crossing, one of three corridors linking two habitat blocks on either side of
10 Route 8. Consequently, the initial study purpose was to document use of this center
11 corridor crossing (1995) and to see if use continued after construction (1997). The
12 area of interest was the corridor crossing and not the ridge line as purported by Dr.
13 Kilpatrick. After assistance from VDFW with study design, fence erection, and data
14 collection, VDFW's interest shifted to ridge line crossing and they requested the
15 second fence be erected near the turbine string. For all intents and purposes, the
16 lower fence could have been abandoned at this point; however, it was retained both
17 to allow for supplemental data and to perfect this monitoring technique. To my
18 knowledge, a single linear strand of barbed wire had not previously been used to
19 monitor wildlife movement.

20 Dr. Kilpatrick's assertion may be valid that "...one must constrain
21 interpretation to the data that was collected during the same period...and with the
22 same sampling effort (upper fence)..." as the upper fence was not used during the
23 spring 1995 period. If his assertion is correct that the detection probability was only

1 35%, then the number of bears could be proportionately elevated from 4 to 12
2 during 1995 and 1996, and from 7 to 20 for 1997 (post construction). Though there
3 are other discrepancies in Dr. Kilpatrick's understanding and analysis of the bear
4 snag study, they are not worth pursuing since his conclusion and mine are the same:
5 "Conclusion: no difference from pre-construction to post construction." Kilpatrick
6 PFT at page 17, line 16. Post construction observations have confirmed that bears
7 do continue to use the ridge line as indicated by photographs, scat and feeding
8 activity. This should not be surprising, as the habitat regenerating at the edges of the
9 project is rich in soft mast. These are characteristics very similar to a power line
10 which is known to offer excellent habitat for bears (Hammond, 2002). Most power
11 lines have a service road, as do wind projects; the difference being that the Searsburg
12 project (and I would suspect Sheffield) restricts access to the road while power line
13 access typically does not restrict recreational use.

14

15 **Q. Do you agree with Dr. Kilpatrick that the wetlands in the Project area may**
16 **cumulatively represent critical bear habitat?**

17 Response. The mitigation guidelines for black bear specify a wetland or wetland
18 complex to be greater than one acre in size to meet the threshold of necessary
19 habitat. There is no provision in the guidelines for lumping widely scattered small
20 wetlands to cumulatively satisfy the one acre threshold. I would note that if such
21 lumping were allowed, it would seem counter to the concept of establishing a
22 threshold in the first place. That having been said, two wetland complexes (BWH-8

1 and BWH-9 on *Exhibit UPC-JW-Reb1*) contain wetlands smaller than an acre but
2 in composite exceed an acre and exhibit characteristics of black bear habitat

3 Even if these wetlands could cumulatively be considered critical habitat, the
4 Project will not have any significant direct or indirect impacts on the wetlands in the
5 project area. Based on analysis prepared by Mr. Gilman for UPC, the direct impact
6 to all wetlands in the project area will be limited to approximately 1.16 acres, with the
7 vast majority occurring in the new proposed Duck Pond access road. Only three
8 wetlands offering potential bear habitat will be directly impacted. The first is
9 identified as Wetland BWH-3 on *Exhibit UPC-JW-Reb1*. This wetland will be
10 crossed by the access drive to turbine C-6, which will result in the direct loss of 0.12
11 acres at the crossing. The second direct impact will occur along the Duck Pond
12 access road at BWH-10. Here, approximately 0.11 acres will be impacted by the
13 access road; however, this wetland presently contains a culverted gravel crossing. A
14 third is wetland BWH-9, where the proposed road crosses a wetland smaller than
15 one acre. I do not believe these impacts will be significant. A similar situation exists
16 at Searsburg where the access road borders the west edge of a wetland, and the game
17 trail where the camera is located borders the north. Bear scat has been found in the
18 access road adjacent to the wetland, and I have photographed bears leaving the game
19 trail to enter the edge of the wetland. As described above, the available evidence
20 indicates that indirect impacts will not prohibit bears from using the other wetlands
21 adjacent to the Project.

22 I would note also that Dr. Kilpatrick confirmed in his discovery responses
23 that he did not identify any evidence of bear use at the beaver wetland located on

1 Libby Hill. As discussed above, the Project’s potential impacts on that wetland have
2 been reduced by eliminating the road located adjacent to the wetland, and by
3 relocating some of the turbines near the wetland. Additionally, topographic
4 differences and the vegetation between the beaver wetland and the turbines enhance
5 buffering of any disturbance to the wetland habitat.

6

7 **Q. Do you agree with Dr. Kilpatrick’s conclusions with respect to potential**
8 **impacts on bear travel corridors?**

9 Response. No, I do not. A large block of contiguous habitat is not a travel corridor
10 rising to the level of necessary wildlife habitat. First, it must be “concentrated
11 habitat that is identifiable...” [10 V.S.A. Section 6001(12)]. Second, the Mitigation
12 Guidelines for Black Bears defines the actual travel route of a corridor as “...the
13 actual location at which bears have crossed or likely cross the *highway*” (emphasis
14 added). Furthermore, the Guidelines base the existence of a corridor upon
15 “...reports of bear-vehicle collisions, sightings, and perhaps dog strikes.” A record
16 of these reports is maintained by the VDFW for the very purpose of establishing a
17 pattern of sightings for the possible identification of a travel route. Review of these
18 maps for Sheffield and Sutton show a likely pattern of concentrated movement
19 across I91 well south of the project and nothing north of the project on US Route 5.

20 ***Exhibit UPC-JW-Reb6a and 6b.***

21

1 **Q. Overall, based on the changes to the Project, and your additional evaluations**
2 **of bear habitat, is your original conclusion that the Project will not have an undue**
3 **adverse impact on bears still valid?**

4 Response. Yes, it is. The relative impact of this Project on bear habitat in the area is
5 not significant. Only 2.6% of the BSB in the project area will be directly impacted,
6 and there is little evidence that the Project's indirect impacts will preclude use of the
7 adjacent habitat resources by bears.

8
9 **Q. Mr. Austin has raised the question of potential bear mitigation. Is UPC**
10 **willing to consider mitigation measures to compensate for potential impacts on bears**
11 **or bear habitat?**

12 Response. First, based on the limited nature of this Project's potential impacts on
13 bear habitat, I do not believe that mitigation is necessary in this instance. UPC has
14 responded to the Agency's concerns over particular impacts, and has significantly
15 reduced the Project's overall impact on bear habitat. Nevertheless, should the Board
16 determine that some mitigation is appropriate, it is my understanding that UPC is
17 willing to work with ANR to identify mitigation measures which may address any
18 remaining concerns over impacts to bear habitat. Such measures may be in the form
19 of addressing some of the unanswered questions that still remain regarding post
20 construction indirect impacts.

21 In order to prepare for the possibility of providing mitigation, UPC is
22 planning to conduct a baseline survey of bear use of the project area later this fall.
23 The nature and scope of this survey is in the process of being defined in consultation

1 with John Austin of ANR. Field observations indicate that 2006 is likely to be a
2 good year for beech mast. An abundance of available mast would provide an
3 excellent opportunity for bear use of the beech within and adjacent to the site to be
4 directly documented and quantified. These observations would provide a solid
5 baseline against which post-construction effects could be compared. Beyond this,
6 however, UPC believes it is best to await the outcome of ongoing camera studies at
7 the existing Searsburg facility, before committing to potentially unnecessary and
8 redundant studies at Sheffield.

9

10 **Q. Does this conclude your testimony at this time?**

11 Response. Yes, it does.