

DEQ Wind Energy Regulatory Advisory Panel (Wind RAP)

November 12, 2009 Meeting

Final Meeting Notes

Location: DEQ Central Office, 2nd Floor Conference Room
629 E. Main Street, Richmond, VA 23219

Start: 9:45 am

End: 4:03 pm

RAP Lead/Facilitator: Carol Wampler, DEQ

Recorder: Debra Miller, DEQ
Gary Graham, DEQ

RAP Members Present:

John Daniel, Troutman Sanders
Stephen Versen, VDACS
Elizabeth Murphy, VMRC (alternate)
Ronald Jenkins, DOF
Judy Dunscomb, TNC
Larry Jackson, Appalachian Power
James Golden, DEQ
Nikki Rovner, Deputy SNR

Bob Bisha, Dominion
Jonathan Miles, JMU
Julie Langan, DHR
Ray Fernald, DGIF
Theo deWolff, Independent Developer
Ken Jurman, DMME
J. Christopher Ludwig, DCR (alternate)

RAP Members Absent:

Tony Watkinson, VMRC (alternate present)
Dan Holmes, PEC
Larry Land, Virginia Assoc. of Counties

Tom Smith, DCR (alternate present)
Mary Elfner, Audubon
Jayme Hill, Sierra Club-VA Chapter

Public Attendees:

Don Giecek, Invenergy (alternate)
Larry Nichols, VDACS (alternate)
Michelle Satterlund, PEC (check alt)
Roger Chaffe, OAG
Richard Reynolds, DGIF (alternate)
Roger Kirchen, DHR (alternate)
David Phemister, TNC (alternate)

Kathryn Amirpashaie, Research Asst
Jim Beamer, Dominion
Jim Madden, BP Wind
Chad Smith, PBS&J
Emil Avram, Dominion (alternate)
Robert Hare, Dominion

Agenda Item: Introductions

Discussion Leader: Carol Wampler

Discussion: The RAP members and other attendees were welcomed. Attendees introduced themselves. The RAP was informed that the path forward has changed slightly. Because there is insufficient time to resolve the RAP's plenary recommendations on all issues during today's and Monday's RAP meetings, we plan to convene publicly-noticed work sessions on specific issues in the next month or so. The purpose of these sessions is to allow the RAP and interested parties to consider the issues in detail and consider refinements to the group's recommendations. As previously planned, the RAP will hold one or two formal meetings to discuss a draft PBR at the end of the work-session process. Today and Monday, the RAP will review the consolidated discussion draft to see where there is agreement and to flag issues for further discussion within the workgroup process, in addition to those flagged from previous meetings.

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Agenda Item: Discussion Document – Landscape

Discussion Leaders: Jonathan Miles, Landscape Subcommittee Co-Chair; Carol Wampler, RAP Leader/Facilitator

Discussion: There is no language in the consolidated discussion draft concerning issues like communications and signal interference, ground transportation and traffic, flicker, noise, ice throws, setbacks, decommissioning, and similar. It was noted that the Landscape Subcommittee developed white papers on a variety of these issues, some of which they recommended are outside the scope of the PBR. The RAP discussed these issues, the fact that our legal advisor indicated that these issues are not within the scope of the statute, and the fact that local governments typically hold that these issues are within their purview, not the state's. By unanimous vote, the RAP determined that these issues are not part of the PBR regulation.

Agenda Item: Consolidated Discussion Draft – Section 3.C – “Other” Natural Resources

Discussion Leaders: Jonathan Miles, Landscape Subcommittee Chair; Carol Wampler, RAP Lead/Facilitator

Discussion: The group reviewed the language of the draft discussion document dealing with “other natural resources.” This language relates to the requirements of §10.1-1197.6 B.7 of the Code of Virginia. Pursuant to the statute, these non-wildlife and non-historic natural resources will need to be analyzed. Discussion focused on Section 3.C (lines 306-317) of the discussion document regarding natural resource issues that are not wildlife and not historic resources (see Attachment A). DOF proposed language 3.C.1 to require an analysis of what forest area may be lost, analyze impacts of loss, and "take into account impacts" (using a Best Management Practices list). See added language to Attachment (below Section 3.C.1). DOF would like for the information learned in this analysis to be available to DEQ and to the public for public comment.

Comments and Concerns:

- Is the BMP list a list of things that must be done (like a checklist) or a list of things from which to select a few things that might be done? Who then decides if that is enough?
- Would this BMP require replacement of forest species habitat somewhere else? Should it be 1:1, or 2:1 or reforestation of a new area? Would there then be a conservancy on that land?
- DOF's language sounds like a mitigation requirement. Statutory language provides for mitigation for significant adverse impacts to wildlife and historic resources only, and not to other natural resources. DOF responded that the applicant is required to do analysis of area and impact. The supplementary documents (guidance/background) will describe how applicant may address those impacts. This proposal does not commit the applicant to mitigation, which is in line with the statute.

Question put before Group:

Is the Draft approach in Section 3.A, B and C (lines 285-317) the right approach for dealing with "natural resources" (i.e. section A for wildlife, section B for historical resources and section C for non-wildlife, non-historic resources)? Is section C the way to approach other non-wildlife, non-historic natural resources? Is this a good way of differentiating Forest/Scenic/Farmland resources from Wildlife and Historic Resources?

Agreement: The discussion draft's format and approach are okay by consensus of the group (with cautionary note that these are very different issues and the language will play into the approach).

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Other Comments and Concerns:

- Not sure that rephrasing statutory requirements in regulatory language is appropriate. Should use statutory language where possible. This comment is not limited just to language under current discussion.
- Need further clarification of "taking into account" language. (DOF response: this language means that the applicant will take voluntary steps to minimize impacts, it is not meant to require a mandatory mitigation plan.)
- Why 5 acres? What is the basis for this? (DOF response: Any size may be considered arbitrary. DOF considered 1 acre and settled on 5.)
- What is the timing for the applicant providing this information to the LGB and the public? (DOF response: the documents should be available to the LGB before their deliberations/consultation/public meeting, and they should be available to the public during public comment period associated with the application.)
- Doesn't the public comment language in section 9 adequately cover the public availability requirements for these documents? (DOF response: Don't believe they do because of timing issues. Will have to look it over and get back with the group.)

Agreement: The group agrees with the concept that the documents need to be available to the public and local government in a timely manner. Problem of timing may be an issue with Section 9 rather than with Section 3.C.

Additional Comments and Concerns:

- Need consultation between DOF and DCR to see if the requirements can be combined. (DOF response: the requirements are very different and thresholds for review are different (100 acres vs. 5 acres and more habitats for DCR), but will look into it).
- Developers see this language (and language associated with some other statutory requirements) as an additional and costly burden, when they have limited development capital to work with. Other types of development have no such requirements. These requirements discourage rather than encourage wind development, which is counter to the intent of the legislature and will make developers more likely to develop wind resources in other states that do not have such requirements. This entire section (3.C.1) is outside what the legislature intended and should be removed. (DOF response: these requirements are not outside the statutory requirements and are consistent with balancing the tradeoff between protecting natural resources and an expedited review process under a PBR.)
- What other states require of developers for wind energy is instructive, but Virginia has statutory requirements to meet.
- Developers also feel that this DOF suggestion might appear to some as a requirement for mitigation and should be clarified that it would be voluntary.

Agreement: Any mitigation or impact reduction provisions for non-wildlife and non-historic resources are voluntary, and that should be made clear in the PBR language.

Proposal for addressing forest impacts will be discussed further in work sessions. Agriculture (Section 3.C.2) and scenic (Section 3.C.3) will follow same process as was done with forest. Since the Landscape Subcommittee did not have time to draft and consider suggested language for the PBR, the agencies will develop language to be discussed in the work sessions.

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Agenda Item: Discussion Document – Section 2 – DEQ Review

Discussion Leader: Carol Wampler, RAP Lead/ Facilitator

Discussion: The group reviewed the application review process by DEQ provided in Section 2. It was noted that revision may need to be considered to allow for more flexible review.

Question put to the group: Should the DEQ review be bifurcated into (1) determination of completeness & if not complete, opportunity to cure, (2) once complete, DEQ determination of "significant adverse impacts," leading to necessity for mitigation plans and (3) once mitigation plan(s) submitted, whether permit coverage should be approved, after consulting with sister agencies? [Section 2.B - lines 131-141]

Comments and Concerns:

- The intermediate steps are necessary for wildlife and historic resource review.
- The language should not require a 30 day delay for review for significant impact and a decision on whether a mitigation plan is necessary if a mitigation plan is submitted with the application. There needs to be a bypass provision so that the application proceeds with subsequent review without delay.

Agreement: The intermediate steps should be included, possibly with language allowing for expedited review if a mitigation plan is included with the application. DEQ has what it needs to make these revisions. No objections to providing bifurcated process with bypass.

The focus of the group then turned to pre-construction analyses of wildlife and historic resources. Regarding Historic Resources, it was noted that Section 3.B of the discussion draft is not complete, and DHR is still working on this provision. Section 3.B will be reworked to reflect recommendations of landscape subcommittee. These will be discussed on Monday, 11/16. The rest of today's discussion will focus on the living resources subsections of Section 3, 4, and 5.

Agenda Item: Discussion Document – Section 3.A – Wildlife Pre-Construction Analysis

Discussion Leader: Judy Dunscomb, Living Resources Subcommittee Chairman, and Carol Wampler, DEQ

Discussion: The focus of the group then turned to the wildlife pre-construction analysis language of Section 3.A (Lines 146-283).

It was noted that in the Living Resources subcommittee, the issue of suggested numeric standards (\$5K/turbine and 10 bats/turbine-year) will need discussion at the plenary level.

The Wind RAP broke for lunch. The meeting began again at 1:38pm.

Discussion of the requirements in Section 3.A was begun and the RAP was reminded to highlight areas that will need further discussion in the work session.

Comments and Concerns:

- Last sentence of Section 3.A.1.a (Lines 163-165) should be in mitigation section.
- Why are invasive species being dealt with? It appears that the subcommittee is regulating wind projects based upon unregulated criteria and it is beyond the scope of the PBR to create new regulation for invasive species by requiring mitigation in this PBR. (LR subcommittee response: subcommittee discussed this at length and agreed to include it.)

Agreement: Take this sentence out (163-165) and move it to mitigation section or delete it. Carol will discuss with other agencies whether and/or how this should be in the PBR. (DEQ is already discussing invasive species as a result of wetland regulation. This may resolve whether it is addressed by other regulation.)

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Other Comments and Concerns:

- Entire Section 3.A.1 is confusing and it is difficult to figure out what is required.
- What is the 20 km for? Change km to miles and make consistent through-out regulation.
- This Section 3.A.1 is overly prescriptive. Recommendations should not be in a regulation - should be in guidance. This is true throughout this entire section.
- Recommend that the entire discussion draft be reviewed and make a determination of what should be in guidance instead.
- The subcommittee's draft recommends a fixed-point survey in Section 3.A.2. At the subcommittee's Oct. 28th meeting, DGIF presented draft recommending area survey. Subcommittee did not have time to discuss fully or to determine whether to accept DGIF's new proposal. DGIF will revise and reoffer additional language .
- It was commented that fixed point is the industry "standard." DGIF noted but wanted to review to allow for something different or in addition to this survey (USFW guidance includes both the fixed-point and area surveys as options).
- DGIF wants to review Section 3.A.3 further.
- Section 3.A.3.a needs rework. Starting on line 224 – the rest should be in guidance instead.
- Section 3.A.4 needs rework for b and c. Number of bat detectors should be guidance. Dates need revision. Some language vague. Line 243 dates may need revision.

Agenda Item: Discussion Document – Section 4.A – Wildlife Significant Adverse Impacts

Discussion Leader: Judy Dunscomb, Living Resources Subcommittee Chairman, and Carol Wampler, DEQ

Discussion: Review of Section 4.A regarding how to determine significant adverse impact. Issues were flagged for further discussion.

Comments and Concerns:

- Wildlife term is all that is needed here because of definition in statute (Va. Code § 29.1-100). Others listed should be removed.
- How will ecological cores be captured if removed?
- Some asserted that statutory definition of wildlife includes more than birds and bats. This needs further review.
- There is inconsistent use of measurements (distance or offset terms). These should be the same throughout.
- Section 4.A.2 should be incorporated into 1. Definition of wildlife issue.

Agreement: Wildlife will be defined later to capture all necessary factors.

Agenda Item: Discussion Document – Section 5 – Wildlife Mitigation

Discussion Leader: Judy Dunscomb, Living Resources Subcommittee Chairman, Carol Wampler, DEQ

Discussion: Section 5.A (lines 341-349) was reviewed first (this contains the introductory language) followed by review of the specific mitigation measure of Section 5.B (lines 351-427).

Comments and Concerns:

- Section 5.C (post-construction monitoring) should be deferred until Monday. The subcommittee fully discussed revised language for this subsection at its Oct. 28th meeting. The chairman did not submit the agreed-upon language to Carol because she thought that the subcommittee would be able to hold an additional meeting. Since the subcommittee could not find a date on which a quorum could attend,

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Judy would like to submit the revised language for RAP consideration. With concurrence of the RAP, this revised language for Sections 5.C et seq. will be distributed Friday for RAP review and discussed at the RAP meeting on Monday (11/16).

- Section 5.B.2 may need revision. DCR and VDACS will talk and get back with new recommendations.
- Lines 322 and 353 should be revised or have some language eliminated once the appropriate definition of "wildlife" is discussed.

The group decided to defer discussion of sections 5.C through G until new subcommittee language is inserted in place of existing language (from LR SC meeting of 10/28).

Attachment A

Wind Energy Regulatory Advisory Panel
First Consolidated Discussion Draft of Regulation
November 5, 2009

Outline:

- Section 1. Authority, applicability and definitions.
- Section 2. Permit by rule for wind energy facilities.
- Section 3. Analysis of the beneficial and adverse impacts of the proposed project on natural resources.
- Section 4. Determination of whether significant adverse impacts to wildlife or historic resources are likely.
- Section 5. Mitigation Plan.
- Section 6. Site plan and area map requirements.
- Section 7. Operating plan requirements.
- Section 8. Facility design standards.
- Section 9. Public participation.
- Section 10. Change of ownership, facility modifications, loss of permit by rule status, termination.
- Section 11. Permit fee requirements.
- Section 12. Enforcement.

Section 1. Authority, applicability and definitions

A. This regulation is issued under authority of Article 5 (§ 10.1-1197.5 et seq.) of Chapter 11.1 of Title 10.1 of the Code of Virginia. The regulation contains the application filing requirements for all wind-powered electric generation facilities consisting of wind turbines and associated facilities with a single interconnection to the electrical grid that are designed for, or capable of, operation at a rated capacity of equal to or greater than 500 kilowatts and equal to or less than 100 megawatts.

B. As used in this chapter:

“Department” means the Department of Environmental Quality

“Disturbance zone” means the area within the project boundary where vegetation management or earth moving activities will occur.

“Ecological Core” means an area of unfragmented and forested land of ecological importance to the DCR that is at least 100 acres in size and identified in DCR’s natural landscape assessment website (www.dcr.virginia.gov/natural_heritage/vclnavnla.shtml).

“GDPIPD Index” means the Gross Domestic Product Implicit Price Deflator Index, which shall be based on the index in June of each calendar year.

“Invasive Plant Species” means a non-native plant species that cause, or are likely to cause, economic or ecological harm or harm to human health (Presidential Executive Order 13112), and contained on the Department of Conservation and Recreation’s invasive plant species list (http://www.dcr.virginia.gov/natural_heritage/documents/invlist.pdf).

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“Historic properties” means properties which are listed in or eligible for listing in the National Register of Historic Places

"Operator" means the person responsible for the overall operation and site management of a wind energy facility.

"Owner" means the person who owns all or a portion of a small renewable energy project facility or part of a wind energy facility.

"Permit by rule" means provisions of the regulations stating that a wind energy facility or activity is deemed to have a permit if it meets the requirements of the provision.

“Pre-Construction” means any time prior to commencing land clearing operations necessary to the installation of energy generating structures at the small renewable energy facility.

“Post-Construction” means any time after commencing operation of the last turbine on the project or phase of that project.

“Project boundaries” means area encompassed by a wind energy facility that is under common ownership or operating control. Electrical infrastructure and other appurtenant structures up to the interconnection point shall be considered to be within the project boundaries. (*General subcommittee definition*)

“Project Boundary” means the area of land under ownership, easement, lease under control via any other legal means) by the Applicant that will also be directly impacted by construction and operation of the proposed facility, at ground level or in the air space above such ground level. (*Living Resources subcommittee definition*)

“Rated capacity” means the maximum capacity that a wind energy facility can deliver at the interconnection point.

“Wildlife” means Natural Heritage Resources as defined by the *Code of Virginia* §10.1-209, the habitat of rare, threatened, or endangered plant and animal species, rare or state significant natural communities or geologic sites, and similar features of scientific interest benefiting the welfare of the citizens of the Commonwealth, Wildlife Species of greatest conservation need, or a state-listed threatened and/or endangered species in the Commonwealth of Virginia at the time an applicant submits an application.

“Wildlife Species” means any animal, insect, or plant that has a species classification.

“Wind energy facility” means a wind- powered electric generation facility, whose main purpose is to supply electricity, consisting of one or more wind turbines and other accessory structures and buildings, including substations, meteorological towers, electrical infrastructure, transmission lines and other appurtenant structures and facilities within the project boundaries. Two or more wind energy facilities, otherwise spatially separated but under common ownership or operation control that are connected to the electrical grid under a single interconnection agreement shall be considered a single wind energy facility.

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Section 2. Permit by rule for wind energy facilities.

A. The owner or operator of a wind energy facility shall be deemed to have a small renewable energy project permit if he:

1. Furnishes to the director all the documents listed in §10.1-1197.6 B 1, 2, 3, 4, 5, 6 and 12;
2. Furnishes to the director an analysis of the beneficial and adverse impacts of the proposed project on natural resources meeting the standards of section 3, and, if in accordance with section 4 the Department determines that significant adverse impacts to wildlife or historic resources are likely, a mitigation plan meeting the standards of section 5. The mitigation plan shall be an addendum to the operating plan of the wind energy facility, and the owner or operator shall implement the mitigation plan as deemed complete by the Department. The mitigation plan shall be considered an enforceable part of the permit by rule;
3. Furnishes to the director a certification signed by a professional engineer licensed in Virginia that the project is designed in accordance with section 8. The facility design requirements shall be considered an enforceable part of the permit by rule.
4. Submits to the director an operating plan describing how the standards of section 7 will be met. The operating plan shall be considered an enforceable part of the permit by rule;
5. Submits to the director a detailed site plan meeting the requirements of section 6; and
6. Submits to the director the results of the public participation effort, including a copy of all written comments received and the response to those comments, conducted in accordance with the requirements contained in section 9.

B. *Within 30 days of receiving all of the documents listed in subsection A with the exception of a mitigation plan, the Department shall inform the applicant whether his submission is complete and whether he is required to submit a mitigation plan. If the applicant's submission is administratively incomplete, such notice will state that the facility will not be considered to have a permit-by-rule until the missing certifications or other required documentation is submitted and determined by the Department to be complete. After the applicant's submission is determined to be complete, and a mitigation plan has been submitted if required, and the Department has consulted with other agencies in the Secretariat of Natural Resources as required by § 10.1-1197.7 of the Code of Virginia, the Department shall notify the applicant that he is considered to have a permit-by-rule.*

Section 3. Analysis of the beneficial and adverse impacts of the proposed project on natural resources.

A. To fulfill the requirements of §10.1-1197.6 B.7 of the Code of Virginia, the applicant will conduct pre-construction wildlife analyses within the project boundary. The analyses shall include the following:

1. Mapping: The applicant shall attach detailed maps of the proposed Project Boundary providing the results of the Wildlife Analysis for: 1) habitat, and 2) Wildlife.

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- a. Habitat Mapping. The applicant will provide a map resulting from the desktop and field surveys within in the Project Boundary. The applicant shall have used the DCR's "The Natural Communities of Virginia, Classification of Ecological Community Groups, 2nd Approximation" (Fleming, Coulling, Patterson and Taverna, 2006) as the vegetation standard to describe and map the ecological community groups on the project area. Additional habitat features including Wildlife habitat (e.g., raptor nests, caves, mines), physiographic features (e.g., rock outcrops, cliffs, wetlands), unfragmented natural ecosystems that are Ecological Cores will be mapped. If any Invasive Plant Species are identified within the Project Boundary during the normal course of habitat mapping surveys, they will be flagged in the field and mapped. All Invasive Plant Species identified during the mapping exercise shall be managed given currently acceptable standards during construction activities.
 - b. Wildlife Mapping. The applicant will provide a report, including a map, of the desktop and field surveys conducted to determine the existence or potential existence of Wildlife. The applicant will obtain a list of Wildlife from the DGIF, the DCR, and the DACS for the proposed Project Boundary and attach it to this application. The Report shall provide relevant, available details of any Wildlife found onsite, including species, detection location(s), age, size, spatial distribution, evidence of reproduction.
2. Fixed-Point Bird Use Surveys: The applicant will provide a report of the fixed-point bird use surveys conducted to estimate seasonal use (relative abundance) of bird species in the project area, and in particular for raptors.

Methodologies:

- a. Surveys will include sampling during spring (April 1 – June 15) and fall (September 1 – November 15) migration, summer breeding (June 15 – August 30), and over-wintering (November 15 – March 31) use within the Project Boundary.
- b. Depending on the size of the proposed Project Boundary, one or more 800-m radius fixed point (circular plot) will be established within the Project Boundary where there is a good view along ridges or areas of interest. All birds seen during each survey will be recorded. The date, start, and end time of observation period, point number, species or best possible identification, estimated number of individuals, distance from plot center when first observed, closest distance, height above ground, activity, and habitat will be recorded. The habitat type over which or in which the bird was first observation will be identified. Weather information recorded for each survey will include temperature, wind speed, wind direction and cloud cover.
- c. Plot surveys will be scheduled to cover all daylight hours. During a survey day, plots will be visited once. Points should be visited at different times of day throughout a season.
- d. Data from the field surveys will be entered into a database and checked thoroughly for data entry errors. The number of raptors and other species seen during each point count survey will be standardized to a unit area and unit time searched. Use will be expressed as the mean number of observations of a species per 20-min survey per survey plot (800-m radius). Mean values and 90% confidence intervals will be calculated by season for all species observed and groups and sub-groups of species (e.g., passerines, raptors, *Buteos*)
- e. The resulting avian use data will be compared to data collected at other wind resource areas using similar protocols.

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- f. The data gained from fixed-point bird use surveys will be used to assess the existence of avian species also considered to be Wildlife.
3. Raptor Migration Surveys: The applicant will provide a report resulting from one year of raptor migration surveys in the Project Boundary in both the spring and fall seasons, conducted to determine the relative abundance of migrant raptors moving within the proposed Project Boundary. The raptor survey will follow methods recommended by the Hawk Migration Association of North America (HMANA). The survey period will be based on existing information from established hawk migration sites in Virginia and/or adjacent states and will correspond with the 8-week period when the peak number of migrant hawks would be expected to move through the area. In the spring this period is expected to be approximately mid-March through mid-May and in the fall approximately beginning-September through beginning-November.

Methodologies:

- a. Surveys will be conducted one day each week in the spring and fall for a total of 16 surveys in each migration season. A survey station will be established within the Project Boundary that provides good visibility over long distances along the primary ridgeline or area of interest. The survey period each day will be at least 6 hours from approximately 10:00 AM to 4:00 PM. Observers will watch for migrant raptor continuously during the six hour survey period. Efforts will be made to schedule surveys on days when weather conditions are conducive to hawk migration (e.g., warm clear high pressure conditions). Data will be compiled by survey day and concurrent data from established hawk watch sites will be solicited from HMANA for comparison.
4. Bat Acoustic Surveys: The applicant will provide a report of bat acoustic surveys conducted to determine the presence of and level of bat activity and use within the proposed Project Boundary.

Methodologies:

- a. Bats will be surveyed within the proposed Project Boundary using currently available acoustic detectors (e.g. AnaBat® or accessible equivalent). It is recommended that the applicant use a pulley-mounted system, or employ a suitable alternative, in conjunction with a meteorological tower to install the acoustical detectors to minimize the reliability/maintainability of the equipment and data.
- b. A minimum of two acoustic detectors will be used during the study and sampling will occur from April 15 to October 15. To the extent possible while still maintaining protection of the equipment, the ground based acoustic detector will be tilted toward the sky to maximize the height at which bat calls will be detected. The second acoustic detector station will be established at a height of ≥ 30 m, or the highest practicable height. A high microphone system will be connected to this second unit and installed within the Project Boundary. Both acoustic units will sample concurrently. The applicant will take all reasonable measures to ensure that each detector achieves a data collection success rate of at least 50% per season during each haying period.
- c. In addition to the index of overall bat activity within the Project Boundary, a relative index of activity by species or species group will also be determined. Bat calls will be identified to species when possible or to species group if call quality does not

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allow for positive species identifications. Calls will be identified by comparing visual metrics (e.g., minimum frequency, slope, duration) to reference calls of known bats.



5. Mist-Netting and/or Harp-Trapping Study: If the applicant identifies potential for State threatened or endangered bat species to occur within the Project Boundary, including the presence of roosting areas, bat hibernacula, the potential habitat for State threatened or bats, or if a State threatened or endangered bat is observed in the project area, the applicant will conduct a summer mist-netting and/or harp-trapping survey for bats on the site. The survey methods will follow applicable State and/or Federal guidance (e.g. the U.S. Fish and Wildlife Service) guidelines for mist-netting surveys in the Indiana Bat Recovery Plan). The number of sites will be based on the approximate size of the study area. The survey will be conducted during the summer season identified in the guidelines, May 15-August 15. Specific details of the survey will be determined by site conditions and survey timing. Netting and/or trapping locations will be determined in the field but will be within the proposed Project Boundary.

- a. Captured State Threatened or Endangered Bats: For all bats captured, standard data such as species, sex, age, reproductive condition, and other notes will be recorded. For every State threatened or endangered bat captured, a radio transmitter will be attached for radio telemetry. The radio telemetry survey will consist of re-locating each tagged bat for 1-5 days post capture (in consultation with the DGIF) to determine locations of roost trees used by the tagged bat. Each roost tree located will be mapped and identified to species. Approximate age, size, condition, and topographic position will be recorded for each roost tree. Exit counts at sunset will be made at each roost tree located, if possible.

B. To fulfill the requirements of §10.1-1197.6 B.7 of the Code of Virginia, the applicant shall also conduct a pre-construction historic resources analysis. The analysis shall include each of the following:

1. *For the area within all areas of land disturbing activity, an archaeological survey and evaluation in consultation with DHR and in accordance with established state guidelines.*
2. *For the area within the 1.5-mile radial survey area around the project:*
 - a. *An evaluation of the project's potential direct and indirect effects to all National Historic Landmarks, National Register-listed properties, battlefields, and rural historic districts; and*
 - b. *An evaluation of the project's potential direct and indirect effects to all identified historic properties.*
3. *For the area within the 5-mile radial survey area around the project:*
 - a. *The collection from the Department of Historic Resources, other affected local and state governments, and local historical societies information on known historic resources; and*
 - b. *The seeking of comment of Native Americans that may attach traditional religious and cultural importance to properties.*

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C. To fulfill the requirements of §10.1-1197.6 B.7 of the Code of Virginia, the applicant shall also conduct an analysis of the impact of the proposed project on other resources. The analysis shall include:

1. An analysis of the impact of the project on the Commonwealth's forestland resources; (Note: **DOF to recommend language on methodology – see BELOW for DOF Language**)
2. An analysis of the impact of the project on the Commonwealth's farmland resources (Note: **VDACS to recommend language on methodology**); and
3. For the area within the 5-mile radial survey area around the project, an analysis of the impact of the project on existing and potential designated scenic resources as described in the Virginia Outdoors Plan. (Note: **DCR to recommend language on methodology**)

The following is to be inserted for forest impacts (non-wildlife related) into the above Section C.1. This language is from From Ron Jenkins (in meeting with Carol Wampler):



C. To fulfill the requirements of Section 10.1-1197.6 B. 7 of the Code of Virginia, the applicant shall also conduct an analysis of the impact of the proposed project on other relevant natural resources and describe how the applicant plans to take these resource impacts into account when constructing and operating the proposed project. The analysis shall include:

1. When forested areas on the proposed exceed five acres, then the applicant shall provide an overlay of the site map prescribed in Section 3.A.1 of this regulation that indicates that total number of forested acres and their location on the site, the location and number of forested acres proposed to be harvested, the predominant tree species within the portion planned to be harvested, and the proximity of the harvested portion to streams. The applicant shall make this map overlay and analysis available to the local government prior to the public meeting and comment period prescribed in Section 9 of this regulation.

Note: This draft provision contemplates that DOF would provide to DEQ – most likely to become part of DEQ Guidance – BMP's and other options that are commonly recommended to address (that is, to "take into account") impacts of proposed projects on forest land. DOF staff would be available, of course, to DEQ staff, to the applicant, and to the local government for advice.

Section 4. Determination of whether significant adverse impacts to wildlife or historic resources are likely.

A. The Department shall find that significant adverse impacts are likely whenever wildlife analyses indicate any of the following:

1. Wildlife, Heritage Resources, Ecological Cores, or State Threatened and Endangered species, are found to occur within 100 feet of the planned disturbance zone;
2. Migratory or resident songbirds or raptors, breed, forage, roost or migrate through the project boundary; or
3. Bats are observed within the project boundary, or hibernacula are determined to occur within 5 km of the project boundary.

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B. The Department shall find that significant adverse impacts are likely whenever the historic resources analysis indicates that the proposed project is likely to have effects that may alter, directly or indirectly, any of the characteristics a historic property in a manner that would diminish the integrity of the property's location, design, materials, workmanship, feeling, or association.

Section 5. Mitigation Plan.

A. If the Department determines that significant adverse impacts to wildlife or historic resources, are likely, the applicant shall prepare a mitigation plan. The mitigation plan shall include a description of the affected natural resource and the impact to be mitigated, a description of actions that will be taken to avoid the stated impact, and a plan for their implementation. If the impact cannot reasonably be avoided, the plan shall include a description of actions that will be taken to minimize the stated impact, and a plan for their implementation. If neither avoidance nor minimization is reasonably practicable, the plan shall include a description of other measures that may be taken to offset the stated impact, and a plan for their implementation.

B. Specific mitigation measures for wildlife shall include:

1. For Wildlife, Heritage Resources, and Ecological Cores, the Applicant shall take all reasonable measures to avoid adverse impacts, or shall demonstrate in the mitigation plan why adverse impacts can not practically be avoided, and why the proposed actions are reasonable.
2. For State Threatened and Endangered Species, the applicant shall include in the application documentation indicating that the proposed mitigation plan complies with recommendations from either DCR for plants and insects or DGIF for non-insect animals to avoid adverse impacts. If the proposed mitigation plan does not comply with such recommendations, the applicant shall demonstrate in the mitigation plan why adverse impacts can not practically be avoided, and why the proposed actions are reasonable.
3. For Migratory or resident songbirds or raptors, the applicant shall take all reasonable measures to minimize adverse impacts.
4. For bats, the mitigation plan shall include measures to curtail operation of wind turbines on low wind speed nights when bats are likely to be active at the project, and to monitor the efficacy of these measures. Curtailment measures shall be designed either to reduce bat mortality to an average of no more than 10 bats/turbine/year, up to a cost of \$x,000/turbine/year, or maximize avoided bat mortality up to a cost of \$x,000/turbine/year. If measures are designed to achieve fatality levels of no more than 10/bats/turbine/year, monitoring efforts shall be adequate to detect that level of impact.

c. Post-Construction Monitoring: The applicant will submit a report of the results of Post-Construction Wildlife monitoring conducted for 2 years within the Project Boundary, beginning after commercial operation of the last turbine. Post-Construction monitoring activities involve searching for wildlife carcasses beneath and around turbines to determine overall casualty rates and species composition.

Methodologies:

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- a. During Post-Construction monitoring, casualty searches will be conducted at 30% of a project's wind turbines. Turbines will be randomly selected and searched from April 1 – October 30 to identify avian and bat casualties.
- b. Reporting: Any incident involving a State threatened or endangered species will be reported to DGIF.
- c. In addition to carcass searches for wildlife casualties, on-site meteorological data will be collected at an interval suitable to identify and analyze potential correlations with passage and/or casualty rates.

D. Post-Construction Mitigation: After completing the initial 2 years of Post-Construction monitoring and any Significant Adverse Impacts are confirmed, the applicant shall submit a plan consisting of its proposed monitoring and mitigation actions expected to be implemented for the remainder of the project's operating life. If it is determined by the applicant that Significant Adverse Impacts are not confirmed, then the applicant will review the results with the DEQ within 60 days of completion of such findings, and if agreed, no further mitigation by the applicant will be required.

E. Amendment of Mitigation Plan: After 3 years of post-construction mitigation, the Operator of the facility may initiate a consultation with the Department to propose amendments to the mitigation plan. The Department may amend the mitigation plan if it determines that the proposed amendment will avoid or minimize adverse impacts to a demonstrably equal or greater extent as the mitigation measures being implemented at that time. Alternatively, the Department may amend the mitigation plan if the Operator demonstrates that: the mitigation measures being implemented at that time are not effectively avoiding or minimizing adverse impacts, and; the proposed amendments are preferable methods to mitigate for ongoing adverse impacts.

F. Invasive Plant Species Management: Native plant species appropriate to the site will be utilized as part of the construction and landscaping process. In the ordinary course of construction or operation of the facility, if any Invasive Plant Species are identified, they will be removed and discarded from the site.

G. Post-Construction Monitoring and Mitigation Financial Cap: After the facility is in commercial operation, the applicant shall not incur more than \$5,000 per turbine per calendar year for direct or indirect costs or lost revenue resulting from any monitoring and mitigation. This cap will be annually adjusted beginning on January 1, 2012 using the GDPIPD Index. If upon review of the results of the initial 2-year Post-Construction monitoring program that is determined by the applicant and the DEQ that there are no Significant Adverse Impacts, then the applicant will not be required to continue any monitoring or begin any mitigation for that Wildlife Species. If applicable, the applicant will be required to file a report every 5th anniversary of the last turbine placed in commercial operation at the wind energy facility illustrating how the funds are applied to natural resource monitoring and mitigation at the operating facility.

Section 6. Site plan and area map requirements.

A. The applicant shall submit a site plan that includes maps showing the physical features and land cover of the area within the project boundaries, both before and after construction of the

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proposed project. The site plan shall be submitted at *X:1* scale and shall include 1) the project boundaries, 2) the location, height, and dimensions of all existing and proposed wind turbines, other structures, fencing and other infrastructure, 3) the location, grades, and dimensions of all temporary and permanent on-site and access roads from the nearest county or state maintained road, 4) existing topography, and 5) water bodies, waterways, wetlands, and drainage channels.

B. The applicant shall submit a context map including the area encompassed by a 5 mile radius around the project boundaries. The context map shall show state and federal resource lands and other protected areas, state roads, waterways, locality boundaries and transmission and substation infrastructure.

Section 7. Operating plan requirements.

The wind energy facility shall be operated in accordance with its operating plan. Such operating plan shall include standards ensuring that:

1. The wind energy facility will be operated in compliance with its mitigation plan, if such a plan is required.
2. The wind energy facility will be operated in accordance with all applicable permits and regulations.
3. Invasive species shall not be introduced, installed, propagated within the project boundaries, and the owner or operator shall make reasonable efforts to avoid accidental introductions of invasive species within the project boundaries.

Section 8. Facility design standards.

The installation and design of the wind energy facility shall conform to applicable industry standards, including those of the American National Standards Institute, and take into consideration local conditions. All structural, electrical and mechanical components of the wind energy facility shall conform to relevant and applicable local, state and national codes.

Section 9. Public participation.

A. Before the initiation of any construction at the facility, the owner or operator shall publish a notice once a week for two consecutive weeks in a major local newspaper of general circulation informing the public that he intends to construct and operate a facility eligible for a permit-by-rule. The notice shall include:

1. A brief description of the proposed facility and its location;
2. A statement that the purpose of the public participation is to acquaint the public with the technical aspects of the facility and how the standards and the requirements of this chapter will be met, to identify issues of concern, to facilitate communication and to establish a dialogue between the permittee and persons who may be affected by the facility;

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3. Announcement of a 30-day comment period, in accordance with subsection D of this section, and the name, telephone number, and address of the owner's or operator's representative who can be contacted by the interested persons to answer questions or where comments shall be sent;

4. Announcement of the date, time, and place for a public meeting held in accordance with subsection C of this section; and

5. Location where copies of the documentation to be submitted to the department in support of the permit-by-rule notification and any supporting documents can be viewed and copied.

B. The owner or operator shall place a copy of the documentation and support documents in a location accessible to the public in the vicinity of the proposed facility.

C. The owner or operator shall hold a public meeting not earlier than 15 days after the publication of the notice required in subsection A of this section and no later than seven days before the close of the 30-day comment period. The meeting shall be held in the locality, or if the project is located in more than one locality in a place proximate to the location of the proposed project.

D. The public shall be provided 30 days to comment on the technical and the regulatory aspects of the proposal. The comment period will begin on the date the owner or operator publishes the notice in the local newspaper.

Section 10. Change of ownership, facility modifications, loss of permit by rule status, termination.

A. A permit by rule may not be transferred by the permittee to a new owner or operator. However, when a property transfer takes place, the new owner shall notify the department of the sale and fulfill all the requirements contained in this chapter and the Department will acknowledge the existence of a permit by rule in the name of the new owner.

B. Provided such modifications are in accordance with the requirements of the permit by rule and do not increase the rated capacity of the wind energy facility, the owner or operator of a facility operating under a permit by rule may modify its design and operation by furnishing the department a new certificate prepared by the professional engineer and new documentation required under section 2.

C. In the event that a facility operating under a permit by rule violates any applicable design or operating provisions of this chapter the owner or operator of the facility will be considered to be operating an unpermitted facility and shall be required to either obtain a new permit or close, as applicable.

D. The director shall terminate permit by rule and shall require closure of the facility whenever he finds that:

1. The applicant has knowingly or willfully misrepresented or failed to disclose a material fact in his disclosure statement, or any other report or certification required under this chapter, or has knowingly or willfully failed to notify the director of any material change to the information in the disclosure statement; or

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2. The operation of the facility is inconsistent with the facility's operating plan or the operational requirements of this chapter.

Section 11. Permit fee requirements.

A. Purpose. The purpose of this section is to establish schedules and procedures pertaining to the payment and collection of fees from any owner or operator of a wind energy facility seeking a new permit by rule or seeking a modification to an existing permit by rule. It also establishes schedules and procedures pertaining to the payment and collection of inspection fees from any owner or operator of a wind energy facility.

B. Payment, deposit and use of fees.

1. Due date. All permit certification fees are due on the submittal day of the certification package. The inspection fees for the first year or portion of a year are due as part of the permit certification. Thereafter, all inspection fees are due March 1.

2. Method of payment. Fees shall be paid by check, draft or postal money order made payable to "Treasurer of Virginia/DEQ", and shall be sent to the Department of Environmental Quality, Receipts Control, P.O. Box 10150, Richmond, VA 23240.

3. Incomplete payments. All incomplete payments will be deemed nonpayments.

4. Late payment. No certifications will be deemed complete until the department receives proper payment. In the event that the inspection fee is not received by the department on or prior to March 1, the owner or operator of the facility will be considered to be operating an unpermitted facility.

5. Fee schedules. Each certification for a permit by rule or each certification for a modification to a permit by rule is a separate action and shall be assessed a separate fee. The amount of the permit certification fee is based on the costs associated with the permitting program required by this chapter. An inspection fee will be collected annually and its amount is based on the costs associated with the inspections program conducted by the department. The fee schedules are shown in the following table.

Type of Action	Fee
Initial certification	\$????
Modification	
with a new estimate of decommissioning costs	\$????
without a a new estimate of decommissioning costs	\$????
Inspections	\$????

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Section 12. Enforcement.

The Department may enforce the provisions of this chapter and any permits by rule issued under this chapter in accordance with §§ 10.1-1197.9 through 10.1-1197.11 of the Code of Virginia.

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**Priority Issues from Subcommittee Reports
For Plenary Discussion
At Wind RAP Meeting
On November 12 & 16, 2009
Preliminary draft – November 5, 2009**

***** Please cross-reference these issues to the corresponding line numbers in the Consolidated Discussion Draft dated November 5, 2009. *****

De minimis exemption/tiers (cumulative effect/aggregation?) [lines 28-29]

Do we agree that **“health & safety”** issues like communications and signal interference, ground transportation & traffic, flicker, noise, low-frequency noise, ice throws, setbacks, decommissioning, etc. are not within scope of PBR? Note: Most of these were deemed by subcommittee to be within purview of local govts. Might be appropriate issues for potential model ordinance.

How to address **natural-resource issues** that are **neither wildlife nor historic resources** (including forest fragmentation & loss, farmland impacts, and scenic & recreational vistas)? [lines 306-317]

DEQ’s review of application – should it be bifurcated into (1) determination of completeness (& if not complete, opportunity to cure), (2) once complete, DEQ determination of “significant adverse impact,” leading to necessity for mitigation plan(s) and (3) once mitigation plan(s) submitted, whether permit coverage should be approved, after consulting with sister agencies? [lines 131-141]

Wildlife:

- pre-construction analysis [lines 146-283]
- “significant adverse impacts” [lines 319-331]
- mitigation plan [intro lines 341-349; lines 351-427]

Specific questions:

- **\$5000 cap** per turbine per year for monitoring/mitigation? (And John Davy asked if there were a total upper cap) [lines 417-427]
- **10 bats**/turbine/year? [lines 366-373]
- Conformity with **USFWS guidance** (especially re \$5000 & 10 bats)?
- **Post-construction monitoring:** Proposed design is for control group (operating 24/7) compared to various curtailment protocols regarding # bat fatalities. Is the cost of this post-construction monitoring capped? (Consultant West says cost for this type of study would be approx \$300 K for 1 yr) [lines 375-392]
- How to deal with **invasive species**? [lines 412-415]

Historic resources:

- pre-construction analysis [lines 285-304];
- significant adverse impact [lines 333-337];
- mitigation plan [I don’t believe there is anything in the discussion draft yet. Ideas were presented in Landscape Subcommittee’s white papers. To be drafted in cooperation with DHR]

How to deal with **changes**? (Especially in technology or scientific research)

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If/how to amend mitigation plan? [lines 402-410]
DEQ re-opener?
Other?