Concerns of Shawn Smallwood Regarding the Agreement to Settle the Altamont Pass CEQA Challenges

8 January 2006

The settlement agreement between the Parties was sent to the SRC late on Friday afternoon, and will be before the Alameda County Board of Supervisors this Thursday, the 11th of January. If the BOS adopts this Agreement as written, then I think the SRC's role will change and it likely will be unable to achieve its objectives. According to the original and amended Exhibit G to the BOS resolution of September 22, 2005, the SRC shall investigate, monitor and evaluate the effectiveness of the Avian Wildlife Protection Program & Schedule (AWPPS), as well as recommend adjustments to the design and implementation of alternative strategies. The SRC was to approve the fatality monitoring methods to be used through the life of the permits, and was to approve a number of mitigation measures.

The Agreement, however, sets forth mitigation measures and study design parameters not recommended by the SRC. It also restricts the County from implementing alternative strategies that may be recommended by the SRC, thereby removing the means the SRC would have to implement adaptive management strategies as set forth in the Agreement. The Agreement replaces existing and pending recommendations of the SRC with a plan that may not achieve a 50% reduction in raptor mortality and that may prevent the SRC from measuring the percentage change in mortality with reasonable confidence.

The SRC should consider issuing a statement to the BOS prior to the hearing this Thursday. I suggest the SRC requests it be given sufficient opportunity to review the Agreement prior to Board approval. The SRC needs to assess whether the proposed mitigation measures can achieve the 50% mortality reduction target, whether the terms and conditions of the agreement enable the SRC and monitoring team to measure a 50% mortality reduction, and whether they will allow the SRC to continue to provide scientific oversight of the mitigation and monitoring plans.

The following are concerns I have with specific terms and conditions of the Agreement, and with particular statements. The first two concerns regard accuracy, and the rest go to the SRC's objectives.

First, Exhibit G-2 continues to inaccurately state the Tier 1 turbines compose about 2% of the APWRA's wind turbines. The correct value is 1%.

Second, under Recital no. 4 of the Agreement, the County states its wish to settle into the agreement with the Parties … "in order to continue producing wind energy while further reducing raptor mortality in the APWRA." In fact, raptor mortality has not been reduced in the APWRA since any given date, so the implication of the preceding statement is misleading. The recent WEST, Inc. (2006) report indicated raptor mortality last year equaled raptor mortality estimated during the NREL/CEC studies of 1998 to 2003, despite the winter-time shutdown of wind turbines. Furthermore, after I accounted for the fatality searches at wind turbines while they were shut down during winter, the data collected by WEST, Inc. indicate red-tailed hawk

mortality increased 79% and the mortality of the four target species together increased 45% (see attached file). The evidence indicates raptor mortality increased, rather than decreased since the CUPs were approved in September 2005.

Specific Terms

Under Term 3(a), the baseline for determining percentage reduction in annual raptor mortality in the APWRA is set at 1,300. In fact, the SRC has not established its baseline for assessing percent mortality reduction, and decided not to do so until scavenger removal rates are better understood. Establishing a baseline of 1,300 at this point in time prevents the SRC from establishing the baseline, and was arbitrarily decided by non-scientists. Carl Thelander and I recently revised our mortality estimates after having our work reviewed by several statisticians, and we will soon submit a paper reporting on these estimates to a scientific journal. This paper also states the estimates will need to be revised yet again, following directed research on scavenger removal rates. It is premature to establish a baseline mortality ahead of, and independent of, the scientists familiar with the bird mortality issues. Furthermore, I am mystified over why the baseline mortality estimate needs to be set at this time, and why a cap needs to be placed on the mortality adjustment term.

Because the SRC did not establish the baseline mortality of 1,300, and therefore did not approve the scavenger removal and searcher detection adjustments used to arrive at that baseline estimate, term 3(a)(ii) of the Agreement is fatally flawed. It makes no sense to say the percentage reduction in mortality shall be determined using scaling factors for searcher efficiency and scavenging as approved by the SRC, when in fact the SRC will have no say in the adjustments used in the baseline mortality value. It would be scientifically unacceptable to compare the baseline mortality of 1,300 to post-agreement mortality estimates, when the scaling factors between the two sets of estimates do not match. Term 3(a)(iii) implies the SRC will have the opportunity to decide on a more appropriate adjustment factor for scavenger removal rate and searcher detection error, but then leaves the final decision on the adjustment factor to the Parties. As a result, the decision over baseline mortality has been shifted from the SRC to non-scientists.

Term 3(b) replaces the SRC with the Parties in deciding on whether the mitigation measures have been effective and whether adjustments to them should be made. This term changes the role of the SRC from that stated in Exhibit G to merely providing data analysis upon request of the Parties.

Given the terms and conditions of the Agreement, it is highly unlikely a 50% reduction in raptor mortality will be achieved by November 1, 2009, but it is also unlikely the SRC will be able to estimate the percent change in mortality with acceptable confidence (see argument below). Therefore, it will be unclear whether the measures under 3(c) would be required.

Term 4 reduces the County's commitment to winter-time shutdown of existing, non-repowered wind turbines. The winter shutdown was due to increase in duration next year, but this term retracts that commitment. This is a significant reduction in mitigation, which will prevent the 50% raptor mortality objective from being met (see Smallwood and Spiegel 2005a). The Diablo Winds repowering project increased red-tailed hawk mortality nearly 3-fold (Smallwood 2006),

and WEST, Inc. recently reported a 6-fold reduction in red-tailed hawk mortality during the winter-time shutdown, consistent with the forecasts of Smallwood and Spiegel (2005a). However, this winter-time shut down still failed to reduce annual red-tailed hawk mortality, because it was too limited. The winter-time shutdown of wind turbines remains the most promising mitigation measure available for reducing red-tailed hawk mortality, which contributes strongly to overall raptor mortality. Therefore, the decision to delay increasing the duration of the winter-time shutdown for another year will reduce the likelihood a 50% mortality reduction will be achieved. Additionally, the exemption of up to 900 wind turbines committed to a blade-painting experiment (term 6) will further reduce the extent of the winter-time shutdown.

Contrary to the statements in term 5(a)(i), the SRC should not have to identify 24 turbines presumably unconfirmed by WEST, Inc. 2005. According to Wally Erickson the 24 turbines in question are owned by Northwind Energy, who will not participate with the mitigation program. Therefore, the SRC does not need to identify these turbines, because identifying them is not the issue.

Under term 5(a)(i), wind turbines in Tiers 1 and 2 will be shutdown, unless the SRC gives the Companies credit for turbines shut down since May 2002 (see below). However, the SRC has been reevaluating the Tier classification developed by Smallwood and Spiegel (2005c), and recently agreed to allocate two days for Julie Yee to work with me on the data underlying these Tiers. Furthermore, Lee Neher and I just developed a map-based classification of wind turbine threat level that I believe will be superior to the Tier classification. Term 5 will terminate the SRC's analysis of which turbines to shut down to achieve a balance between reducing raptor mortality while minimizing loss of wind power generation.

Per term 5(a)(ii), giving credit to the Wind Power Companies for wind turbines removed since May 2002 would cancel term 5(a)(i), which requires permanent shutdown of wind turbines in Tiers 1 and Tier 2. The cancellation will extend to the number of turbines credited. The SRC needs to examine whether this measure is consistent with achieving a 50% mortality reduction target. Additionally, the exemption of up to 900 wind turbines committed to a blade-painting experiment (term 6) will further reduce the extent of the permanent shutdowns.

The SRC already decided that leaving derelict towers at the ends of turbine rows was a bad idea, and may have contributed to last year's increase in red-tailed hawk mortality despite the winter-time shutdown of turbines. The SRC already agreed to recommend immediate removal of the derelict end-of-row turbines. Therefore, to see it as an option under term 5(c) is inconsistent with the SRC's assessment to date.

Term 6 sets forth study design that was supposed to be decided by the SRC. The SRC has yet to decide whether blade painting would be implemented as an experiment. It was already established in the 2005 CUPS that blade painting was an option to be considered by the SRC. If the SRC were to decide blade paining was warranted, then the existing CUPs provided us the authority to recommend it. Term 6 of the Agreement provides no more mitigation than was already required, while dictating study design to the SRC.

Term 6(c) exempts turbines with painted blades from the seasonal shutdown experiment. This exemption raises questions. Would not this exemption require fatality searches at up to 900 turbines (450 in each treatment) in addition to the turbines searched as part of the APWRA-wide monitoring plan? The blade painting cannot be assessed for effectiveness absent fatality searches, and exempting these turbines from winter-time shutdown further complicates their incorporation into the APWRA-wide monitoring plan; there are only so many confounding factors that can be tolerated within the sample of wind turbines used for monitoring. Thus, if the BOS agrees to require the SRC's recommended 2,500 turbines in the fatality searches for APWRA-wide monitoring, then this exemption should result in up to 3,400 turbines being searched by the fatality monitoring team. The monitoring team would need additional funds for this level of effort.

Term 6(c) exempts wind turbines committed to the blade painting experiment from permanent shutdowns. Therefore, the Wind Power Companies may very well select all Tier 1 through Tier 3 turbines for incorporation into the blade painting experiment, thereby exempting all of them from being shut down. The Wind Power Companies will design the blade painting study (term 6a), so the SRC will have little control over all Tier 1-3 turbines being exempted from both winter-time and permanent shutdown. This outcome could result in increased raptor mortality because it remains unknown how blade painting will affect raptor mortality in the field.

Terms 6(d)(i-iii) further remove the SRC from the design of the blade painting study.

Term 11 countermands the existing CUP provisions giving the County authority to modify or add mitigation measures addressed in this Agreement, thereby forfeiting much of the management plan described in the 2005 CUPs. I think this term eliminates the meaning of recommendations made by the SRC with regard to alternative mitigation and monitoring measures. The Wind Power Companies will be able to routinely argue that SRC recommendations violate term 11 of the Agreement.

General Concerns

These terms and conditions failed to address some important issues, such as whether the 50% mortality reduction target applies to the APWRA as a whole, or to individual companies. How can the SRC conclude a 50% APWRA-wide mortality reduction has occurred when certain companies in the APWRA have refused to participate with the mitigation or monitoring programs, e.g., Northwind Energy, LLC? If failure to achieve a 50% reduction in raptor mortality results in permit revocation, should not monitoring be sufficient to detect a 50% change among wind turbines of each company? Or will permits be revoked from all participating companies in the APWRA at once?

Determining whether a 50% reduction target has been achieved will require a sample size large enough to detect a reduction that is greater than the 50% target to the degree that the acceptable precision of the estimate is the difference between the larger reduction target and the 50% target, i.e., the target needs to be 50% + the percentage error in the estimated reduction. Therefore, new power analyses are needed as well as a larger sample size than the one the SRC recommended to

the BOS. If our precision of the estimated change is to be 10%, then we need to target a 60% reduction, meaning we likely will need a sample size much larger than 2,500.

The Agreement did not include commitments for mitigation monitoring or a performance bond. As far as I can tell, the wind power companies have not complied with their CUPs because they have not implemented most of the required mitigation measures set forth in September 2005. The actions taken were unilateral, without consulting the SRC as required. I would have thought that at this point a mitigation monitoring plan would be required, along with a performance bond. What will happen if the Agreement's implementation dates are missed?

Summary

The Agreement reduces the role of the SRC. Further, it reduces the mitigation measures committed to reducing raptor mortality, while setting a reduction target that cannot be supported by the evidence and while unscientifically restricting the adjustments that can be made to the baseline mortality estimate. With the blade painting exemption, none of the wind turbines in Tiers 1 through 3 need be shut down. The winter-time shutdown experiment will be reduced in extent due to a one-year delay in expanding its duration and due to the blade painting exemption. Alternative or additional measures will not be allowed under term 11. Blade painting will be implemented at a relatively large scale, the results of which might reduce mortality or might increase it. This Agreement appears to give away mitigation measures while curbing the role of the SRC.

References

Smallwood, K. S. and L. Spiegel. 2005a. Assessment To Support An Adaptive Management Plan For The APWRA. Unpublished CEC staff report, January 19. 19 pp.

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