

## NOTES | 11/7/2007 (P65)

### Altamont Pass Wind Resource Area Scientific Review Committee Conference Call

Prepared by the Center for Collaborative Policy  
Reviewed and SRC Final Approval 2/13/08

#### Agenda Items

AWI Black Blade Painting Study Design  
Settlement Issue: SRC Field Visit to Identify High Risk Turbines  
December In-Person SRC Meeting Agenda

#### AWI Black Blade Painting Study

Related Materials: [P47 AWI Draft Black Blade Study Plan \(10/19/07\)](#)

Bill Damon introduced the black blade painting study design. The written description is basically the same as the previous draft except for the sample size. As recommended by the SRC, Lee Neher completed the two-level stratification by turbine row length (small, medium and long) and by topographical feature (ridge-top and valley). According to Damon, AWI's goal is to find a management measure, namely painting a single blade on each turbine black, which will reduce avian mortality without shutting down turbines. AWI recognizes conducting a formal scientific study with a sample size larger than the approximately 40 turbines used for its initial analysis is necessary.

#### Jim Estep Comments

Jim Estep provided written feedback on the study design prior to the call; his comments focused on the format and rationale of the study plan, and the study design. In summary:

- It should be clear in the characterization of the preliminary results of the 20 currently painted turbines that it was not part of a coordinated monitoring program and is not scientifically supportable or repeatable.
- It should be clear that an exemption of all AWI's 920 turbines is not required (as is stated) to conduct the study. Only those turbines that are included in the study (170 treated and 136 control) are required to be exempt from winter shutdown for purposes of evaluating the effects of black blade painting. The proposal to exempt the remaining turbines is an economic issue, not a scientific issue.
- The study plan lacks clear goals and objectives and includes non-scientific justification for the study design, including economics and public health issues.
- The study design does not include specific information on the process used to select the study turbines.
- The study design appears to suggest that the currently painting turbines will remain in their current locations, which would violate randomness.
- The study does not describe the rationale for using only the southern portion of the APWRA in the section process.
- The study plan indicates that AWI will analyze data and prepare reports. This should be a function of the MT or other independent body.
- If effective, the study will be unlikely to provide more than a negligible contribution to the 50% reduction requirement by November 2009 deadline.

- There remains uncertainty regarding the availability of the technique and the commitment of all companies to use the technique if it proves effective.
- There is uncertainty regarding the applicability of the technique to new generation turbines. Repowering activities have already begun in the Altamont and is expected to continue, which may negate potential benefit of black blade painting.

### **Shawn Smallwood Comments**

Shawn Smallwood also developed comments prior to the call and summarized his feedback and concerns. In summary:

- Because AWI has requested an exemption from shutting down study turbines in the winter, sporadically operating turbines among shutdown turbines could cause mortality to increase on a per-operating turbine basis, thereby partly negating the mortality reduction gained from the winter shutdown. AWI turbines might be where all the winter-time fatalities are found, so should AWI provide compensatory mitigation for causing a disproportionate number of fatalities during the winter?
- The sample is limited to the south side of Highway 580, rather than all 920 AWI turbines. The power analysis done to determine the appropriate sample size for statistical validity was based on the assumption of all 920 turbines serving as the statistical pool for the random sample of turbines to use in the experiment.
- Human health effects to justify the design have not been agreed to by the SRC and seem beyond the SRC's scope and expertise.
- The long-term applicability of the measure, given the likelihood of repowering, is questionable because raptors nearby larger, modern turbines will not be able to view the entire rotor plane, as they can with extant old-generation turbines.

### **Sample Location**

The proposed sample size is 170 turbines in the treatment or painted group and 136 turbines in the control group. Bill Damon, AWI, clarified that when control turbines were selected, 3 AWI turbines selected for the control group (i.e. unpainted) already had black blades so those 3 have to have white blades installed. Twenty of 41 AWI turbines that are currently painted fell within the treated group (those with one black blade).

One member observed that the study design document mixes the rationale for the County with the rationale for the science and the SRC. This mixing might give a naïve reader the impression that the SRC endorsed AWI's rationale, including benefitting human health.

Bill Damon clarified that AWI prepared the study design for the County.

### **Public Comment**

Brian Karas: What is the definition of a fruitful project? Is it related to the 50% goal?

Comment: Do non-settling parties work toward the 50% goal?

### **SRC Opinions on Conducting the Study**

The facilitator sought to clarify if the SRC supported the study generally moving forward. SRC members responded:

1. Yes. If it proves effective, would like it to go forward Altamont-wide

2. Yes. The study could last 10 months (instead of 12 months because of the winter shutdown) and not allow the winter shutdown exemption. This SRC member did not approve the winter shut-down, and results might still be useful.
3. Yes, the results could be helpful even though uncertain about its future utility. He would like to understand the most likely scenario with regards to de-commissioning old turbines and repowering. This member would like more confidence that information would have utility.
4. Yes
5. No. Initially supported, but does not feel it has future utility. Study design justified on health effects is not in SRC purview. Sample size is flawed because sample came from something other than the power analysis sample. If the power analysis was corrected to analyze effects on the south side of the Altamont and the issue around justifying health effects was addressed, this member could agree to the study.

### Feedback on the Design

**SRC members uniformly feel that MT should conduct the analysis and prepare the report.** At the 9/24 SRC conference call, the SRC discussed extensively the need for an independent analyst. This part of the study design did not reflect the SRC's recommendation and the County's stipulation that independent monitoring and analysis is required by the permit. AWI said that they have to make the data and analysis available to the University of Maryland, as part of its painting permit before making the results public. For this reason, AWI would like to conduct its own analysis and expressed concern about the additional costs of the monitoring team analysis. The monitoring team will collect the data and have access to it. **Regardless, the SRC recommendation still stands from 9/24 "data control and management", stipulating that independent analysis is absolutely necessary.**

### Concerns about South-Side-Only Turbines

AWI made available turbines only from the south-side of Highway 580 for the study. Some of the SRC members expressed concern about drawing turbines only from the south side and not the north side. One concern is that the power analysis, used to determine the appropriate sample size, was based on expected fatality rates using the north and south side combined. Another concern is that turbines selected from the south side would not constitute a random sample from the Altamont, nor even from the south side of the Altamont, because the sample would be comprised of just the AWI south-side turbines.

One member did not feel that the south-side-only would be a problem. Another member countered that differences in fatality rates between the north and south sides could confound the results of a study performed only in the south. The first member responded that any differences between the north and south fatality rates actually contributes to the opposite rationale of constraining the study to the south in order to limit the nuisance variation that would occur if both sides were sampled. This member acknowledged that a south-side sample could be limited because the study results would statistically apply to only the south side. However, the limitations may not be an issue if it is not too much from a biological standpoint to assume that the effectiveness of the blade painting in the south would be similar to that in the north. This member also noted that randomization occurs when assigning turbine strings to control and blade painting treatments, and is less concerned than other members about the lack of randomness in the turbine-selection pool.

Two other members felt south-side-only turbines would be problematic. One because of the sample size based on the power analysis, and the other felt it should be Altamont-wide to accurately reflect differences in avian mortality and abundance.

At the end of the discussion, the SRC agreed that Julie Yee would conduct another power analysis to examine the sample size necessary if the study only used south-side turbines.

### **Exemption**

The SRC had to defer the discussion on the exemption to a subsequent meeting. The County would like the SRC to comment on whether the exemption would make a difference or have an effect on the monitoring program.

The County confirmed that if an exemption were to occur, an exemption would likely go before the Board of Zoning Adjustments. However, the County will have to confirm this.

### **Next Steps**

Julie Yee to do a Power Analysis based on fatality rates estimated from:

- 1) AWI turbines in south
- 2) All turbines that are like AWI's in the south
- 3) All turbines in the south

### **Settling Party Issue: Possibly Removing High Risk Turbines**

The settling parties are considering the merits of removing high risk turbines and wanted to discuss the possibility of meeting with the SRC, in the field, to identify high risk turbines for removal. The SRC agreed to go into the field and work with the parties on this effort. The tiered classification system, developed by Smallwood and Spiegel, was meant to be used to identify high risk turbines as guidance and then be complemented with professional judgment. Further, the removal of Tier 1 and 2 turbines may have altered the configuration of turbines, and consequently changed which turbines should be considered more hazardous. The field visits are consistent with this approach. The settlement agreement requires that Tier 3 turbines be removed. The field visit would identify high risk turbines, which might be Tier 3 or other, to move this element of the settlement forward.

### **Field Visit Scheduled: Nov 29-Dec 1**

The SRC requested the following to make the field visit as successful as possible:

- Keep the group size to a small number; however, monitoring team members should attend. Brian Latta confirmed that monitoring team members will attend and bring mortality data with them.
- Have as much information about the turbines as possible available during the visit.
- Identify whether turbines (and turbine mortality) have been sampled in a scientific project
- The tour will be open to the public since if three or more SRC members participate, public meeting laws apply under the Brown Act.

### **Potential Mortality Reduction Associated with High Risk Turbine Removal**

The settling parties are also struggling to determine how much of a reduction in mortality might occur if additional high risk turbines are removed.

Shawn Smallwood conducted an assessment of removing high risk turbines in 2005. He suggested that the estimates might be overly optimistic, but could provide some measure of reduction. Another member warned settling parties that estimating the percentage reduction that might occur is challenging, and that even after identifying the highest risk turbines, it would be difficult to project what percentage reduction might occur.

### **Compliance Reporting Verification**

Settling party Michael Boyd, Californians for Renewable Energy, asked whether independent verification could occur as part of the site visit, i.e. determining what Tier 1 and 2 turbines have already been removed. All parties agreed that compliance verification could occur as part of the visit, time permitting. The SRC is also planning to visit the field in December.

Bill Yeates: Are there 6 Tier 1 and Tier 2 operating?

County representative Sandra Rivera responded that a portion is with AWI and the other is with FPLE, granted credit for removing other high risk turbines in exchange for these.

### **December Agenda Items**

- Review final report on monitoring
- Memo on 50% -- trend analysis vs. some other method, alert that 50% is not likely to be reached
- Fall Tour: Half-Day with Monitors and Half-Day with Companies
- Prepare for annual meeting with settling parties
- Mortality Rates of Turbines Shutdown vs. Lockdown

### **Participants**

#### **SRC**

Joanna Burger  
Jim Estep  
Sue Orloff  
Shawn Smallwood  
Julie Yee

#### **Monitoring Team**

Brian Latta  
Brian Karas

#### **Staff**

Chris Bazar, County of Alameda  
Sandi Rivera, County of Alameda

#### **Identified Members of Public**

Joan Stewart  
Julia Sorenson  
Bill Damon  
Jim Hopper  
David Cleary  
Zach Walton  
Jim Walker  
John Mormon  
Charles Burris, SF Chronicle  
Gabe Vaca, AES

Facilitator Gina Bartlett, Center for Collaborative Policy