

**BEFORE THE
ENERGY FACILITY SITING COUNCIL
OF THE STATE OF OREGON**

In the Matter of the Request for Amendment #2 of
the Site Certificate for the Biglow Canyon Wind
Farm

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FINAL ORDER ON
AMENDMENT #2

May 10, 2007

BIGLOW CANYON WIND FARM:
FINAL ORDER ON AMENDMENT #2

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LIST OF ABBREVIATIONS

BCWF	Biglow Canyon Wind Farm
BPA	Bonneville Power Administration
Council	Energy Facility Siting Council
dB(A)	The “A-weighted” sound pressure level. The sound pressure level in decibels as measured on a sound level meter using the A-weighted filter network. The A-weighted filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise.
Department	Oregon Department of Energy
Figure 1a	Figure 1a of the amendment request as revised by e-mail from Rick Tetzloff, March 1, 2007, with attachment (“p1r2Figure1a_3-1-07.pdf”)
MW	megawatt or megawatts
O&M	Operations and maintenance
Orion	Orion Sherman County Wind Farm LLC
PGE	Portland General Electric Company

**BIGLOW CANYON WIND FARM:
FINAL ORDER ON AMENDMENT #2**

I. INTRODUCTION

1 The Energy Facility Siting Council (Council) issues this final order in accordance with
2 ORS 469.405 and OAR 345-027-0070. This order addresses a request by the certificate
3 holder, Portland General Electric Company (PGE), for amendment of the site certificate for
4 the Biglow Canyon Wind Farm (BCWF).

5 On June 30, 2006, the Council issued a site certificate to Orion Sherman County Wind
6 Farm LLC (Orion) for the BCWF, a wind energy facility with a peak generating capacity of
7 approximately 337.5 megawatts (MW) to be built in Sherman County, Oregon. On November
8 3, 2006, the Council approved a transfer of the site certificate from Orion to PGE as set forth
9 in the Final Order on Amendment #1. The facility is under construction.

10 The definitions in ORS 469.300 and OAR 345-001-0010 apply to terms used in this
11 order, except where otherwise stated or where the context indicates otherwise.

II. PROCEDURAL HISTORY AND AMENDMENT PROCESS

12 On December 22, 2006, PGE submitted to the Oregon Department of Energy
13 (Department) a request for amendment of the site certificate (Amendment #2).¹ On December
14 28, the Department instructed the certificate holder to send copies of the amendment request
15 to the appropriate officers, agencies and tribes listed in OAR 345-020-0040. The Department
16 requested agency comments by January 31, 2007. On January 2, the Department sent notice of
17 the amendment request to all persons on the Council's mailing list and to persons on a list of
18 property owners supplied by the certificate holder. By letter dated January 8, 2007, the
19 Department notified PGE that the proposed order would be issued no later than March 1,
20 2007.

21 The Department received responses from the Oregon Parks and Recreation
22 Department, the State Historic Preservation Office, the Office of the State Fire Marshall, the
23 Water Resources Department and the Gilliam County Planning Department. The Water
24 Resources Department expressed its concern that an authorized source of water (or temporary
25 authorization) be secured by PGE for water use during construction. No other concerns were
26 expressed by the reviewing agencies. No comments were received from the public.

27 By letter dated February 28, the Department notified PGE that additional time would
28 be needed and that the proposed order would be issued by March 9, 2007. The Department
29 provided PGE with a draft of the proposed order on March 2. After review of PGE's
30 comments, the Department notified PGE, in a memorandum dated March 9, that additional
31 time would be needed and that the proposed order would be issued by March 26.

32 The Department issued its proposed order on March 14, 2007. On March 15, the
33 Department issued a public notice requesting comments on the proposed order and setting a
34 deadline of April 16, 2007, for comments or request for contested case. On April 30, the
35 Department issued a Supplemental Notice on changes to Condition 9.

¹ Certificate Holder's Request for Amendment #2 to the Site Certificate for the Biglow Canyon Wind Farm.

1 Comment letters were received from Keith May (Oregon Trails Advisory Council) and
2 David Welch (Oregon-California Trails Association).² Both letters addressed concern about
3 whether adequate on-site investigation had been done to assess whether the proposed
4 amendment would have any impact on segments of the Oregon Trail. The letters did not
5 request a contested case hearing. The Department asked PGE to respond to these concerns.
6 PGE provided a letter outlining the findings contained in cultural resource surveys conducted
7 on areas within the BCWF site boundary in the locations of the historic alignment of the
8 Oregon Trail.³ The Department forwarded PGE's response to Mr. May and Mr. Welch and
9 provided copies of the comment letters and PGE's response to the Council.

10 No physical traces of the Oregon Trail have been found in any of the areas affected by
11 the BCWF (as currently approved under the First Amended Site Certificate or as proposed
12 under the Request for Amendment #2). Even though no evidence of intact segments of the
13 Oregon Trail exists in the areas surveyed, the site certificate requires further on-site survey for
14 cultural resources if there will be any ground disturbance associated with wind facility
15 construction in areas not previously surveyed. In addition, the site certificate requires a halt to
16 ground disturbance and notification to SHPO if any cultural resources are discovered during
17 construction. The site certificate requires avoiding disturbance to any intact segments of the
18 Oregon Trail discovered during construction.

19 Following the Council's discussion of the Department's Proposed Order at a meeting
20 on May 10, 2007, the Council issued this Final Order.

III. DESCRIPTION OF THE PROPOSED AMENDMENT

21 PGE requests amendments to the First Amended Site Certificate for the Biglow
22 Canyon Wind Farm that, if approved by the Council, would:

- 23 1. Authorize new access road segments outside of the previously-approved turbine
24 micrositing corridors.
- 25 2. Authorize new collector line segments outside of the previously-approved turbine
26 micrositing corridors.
- 27 3. Increase the area of temporary construction disturbance to include crane paths and
28 construction area around new access road and collector line segments.
- 29 4. Expand one turbine micrositing corridor.
- 30 5. Eliminate one alternative substation location.
- 31 6. Eliminate aboveground 230-kV or 500-kV transmission lines.
- 32 7. Increase the area of temporary and permanent impacts to Category 6 habitat by
33 approximately 33 acres; increase the area of temporary and permanent impacts to
34 higher-value habitat by approximately 1.4 acres.
- 35 8. Add a condition requiring the certificate holder to perform a spring rare plant survey
36 in an area crossed by a proposed new collector line segment.

² Letter from Keith May, Oregon Historic Trails Advisory Council (March 20, 2007); letter from David Welch, Oregon-California Trails Association (March 21, 2007).

³ Letter from Rick Tetzloff, Portland General Electric Company (April 2, 2007).

- 1 9. Add a condition requiring the certificate holder to avoid construction impact to a
2 stream channel and a wetland.
- 3 10. Require the certificate holder to provide resource survey information (cultural
4 resources, rare plants and wetlands) for an alternative turbine corridor near Klondike
5 Road in the southern portion of the project site.
- 6 11. Revise the boundaries of the habitat mitigation site.
- 7 12. Allow the certificate holder the option to use its own qualified biologists to monitor
8 nest sites for sensitive species during construction, to perform some of the wildlife and
9 habitat monitoring and mitigation activities required under the site certificate, to
10 conduct revegetation monitoring and to conduct monitoring of habitat enhancement in
11 the habitat mitigation area.
- 12 13. Eliminate one property from the previously-identified list of noise sensitive properties.
- 13 14. Eliminate the certificate holder's option to build the facility in a single phase of
14 construction.
- 15 15. Revise the site restoration cost estimate to account for changes to the facility described
16 in the amendment request.
- 17 16. Allow the limited use of PGE logos on wind turbine nacelles.

1. Amendment Procedure

18 Under OAR 345-027-0050(1), a certificate holder must request a site certificate
19 amendment "to design, construct, operate or retire a facility in a manner different from the
20 description in the site certificate" if the proposed change:

- 21 a) Could result in a significant adverse impact that the Council did not evaluate and
22 address in the final order granting a site certificate affecting any resource protected
23 by applicable standards in Divisions 22 and 24 of this chapter;
- 24 b) Could result in a significant adverse impact that the Council did not evaluate and
25 address in the final order granting a site certificate affecting geographic areas or
26 human, animal or plant populations;
- 27 c) Could impair the certificate holder's ability to comply with a site certificate
28 condition; or
- 29 d) Could require a new condition or a change to a condition in the site certificate.

30 Because the proposed amendment would authorize construction outside of the site
31 boundary previously approved by the Council, construction could have adverse impacts that
32 the Council did not evaluate and address in the Final Order on the Application or in the Final
33 Order on Amendment #1. Such impacts could affect the resources protected by standards in
34 Divisions 22 and 24 and could affect geographic areas or human, animal or plant populations.
35 The proposed amendment would impair the certificate holder's ability to comply with current
36 site certificate conditions and would require new conditions and changes to current
37 conditions. For these reasons, amendment of the site certificate is needed to allow
38 construction and operation of the BCWP as proposed in the amendment request.

1 The proposed amendment would enlarge the site of the BCWF facility and would
2 make other changes to the construction and operation of the facility allowed under the site
3 certificate. For those areas of where the site boundary would be enlarged, the Council must
4 consider whether the facility complies with all Council standards (OAR 345-027-0070(9)(a)).
5 For the other changes, the Council must consider the effects of the amendment on any finding
6 required by Council standards (OAR 345-027-0070(9)(c)).

2. Amendments to the Site Certificate as Proposed by PGE

7 In Attachment 1 to its request for Amendment #2, PGE proposed the following
8 amendments to the site certificate. Proposed additions are double-underlined and proposed
9 deletions have a strikethrough. The Department recommended revisions to the site certificate
10 that incorporate the substance of these amendments but that include additional language
11 consistent with PGE's amendment requests. The Department's recommended revisions are
12 discussed in Section VII.1.

13 *Page 1, lines 7-11:*

14 The findings of fact, reasoning and conclusions of law underlying the terms and conditions of
15 this site certificate are set forth in the following documents related to the facility, which are
16 incorporated herein by this reference: (a) the Council's Final Order in the Matter of the
17 Application for a Site Certificate for the Biglow Canyon Wind Farm (the "Final Order on the
18 Application") ~~and~~; (b) the Council's Final Order on Amendment #~~1~~1; and (c) the Council's
19 Final Order on Amendment #2 [Amendment #1]

20 *Page 1, lines 12-15:*

21 In interpreting this site certificate, any ambiguity shall be clarified by reference to the
22 following, in order of priority: (1) this ~~First~~Second Amended Site Certificate; (2) the Final
23 Order on Amendment #~~2~~2; (3) the Final Order on Amendment #1; (3) the Final Order on the
24 Application; and (4) the record of the proceedings that led to the Final Orders on the
25 Application, Amendment #1, and Amendment #~~1-2~~1. [Amendment #1]

26 *Page 2, lines 23-30:*

27 In the site certificate application, the certificate holder requested the flexibility, within defined
28 500-foot-wide turbine corridors, to defer the final selection of turbine vendor, turbine size,
29 number of turbines to be installed, and precise turbine layout until after the issuance of a site
30 certificate and prior to commencement of construction. In the site certificate application, the
31 certificate holder defined the range of possible turbine vendors, sizes and numbers. In the site
32 certificate application, the certificate holder also defined ~~two alternative transmission line~~
33 ~~options~~, two alternative substation locations, and three alternative O&M facility locations.
34 Subject to specific conditions, this site certificate grants that flexibility.

35 *Page 3, lines 3-13:*

- 36 a. Power Collection System. Each wind turbine will generate power at about 600 volts.
37 The transformer sitting at the base of each wind turbine unit will increase the voltage
38 to 34.5 kilovolts (kV). From the transformer, power will be transmitted to a central
39 substation by means of electric cables. Most of the cables will be buried three feet or
40 more below the surface in trenches about 3 feet wide. In areas where collector cables
41 from several turbine strings follow the same alignment, *e.g.*, on approach to the
42 substation, multiple sets of cables may be installed within a single trench. If the
43 facility is fully developed, there will be about ~~468,000 feet~~ (88.699 miles) of 3-wire

1 collector cables. Generally, these cables will be above, below or adjacent to the fiber
2 optic cables comprising the supervisory control and data acquisition system.

3 *Page 3, lines 23-37:*

- 4 b. ~~Substations and Interconnection System. Under one of its transmission alternatives,~~
5 ~~the certificate holder would construct a new substation in the southern section of the~~
6 ~~facility site.~~ Substation. The substation site would be a graveled, fenced area of up to 6
7 acres with transformers, switching equipment and a parking area. Transformers would
8 be non-polychlorinated biphenyl (PCB) oil-filled types. ~~The transmission line would~~
9 ~~be about 3 miles long and would interconnect with the~~ substation would connect with a
10 new Bonneville Power Administration (BPA) system at the existing Klondike
11 Schoolhouse Substation transmission. Under one alternative, the certificate holder
12 would construct a new substation in the southern section of the facility site. Under its
13 second ~~transmission~~ alternative, the certificate holder would construct a new
14 substation near the center of the facility site. ~~The substation site would be a graveled,~~
15 ~~fenced area of up to 6 acres with transformers, switching equipment and a parking~~
16 ~~area. Transformers would be non-PCB oil-filled types. The transmission line would be~~
17 ~~about 7 miles long and would interconnect with an electric transformer or switching~~
18 ~~facility to be installed at BPA's John Day Substation or Switchyard for delivery of~~
19 ~~electricity to BPA's high voltage transmission system.~~

20 *Page 4, lines 20-25:*

- 21 f. Access Roads. The certificate holder will construct about 40.541.5 miles of new roads
22 to provide access to the wind turbine strings, together with turnaround areas at the end
23 of each wind turbine string. The roads will be about 16 feet wide (possibly up to 28
24 feet wide in some locations) and will be composed of crushed gravel with shoulders
25 (without gravel) about 3 feet wide. In addition, the certificate holder will improve
26 about 0.7 mile of existing roads by providing an all-weather surface and, in some
27 cases, widening the roads to accommodate construction vehicles.

28 *Page 4, after line 34:*

- 29 h. Temporary Crane Paths. The certificate holder will develop seven temporary crane
30 paths, totaling approximately 5.1 miles, in order to move construction cranes between
31 turbine corridors. The temporary crane paths will be returned to their pre-construction
32 condition following completion of construction of the facility.

33 *Page 5, lines 25-30:*

- 34 (5) ~~If the certificate holder elects to build the facility in a single phase using only GE 1.5-~~
35 ~~MW turbines, GE 3.0 MW turbines or a combination of these two GE turbines, before~~
36 ~~beginning construction of the facility and after considering all micrositing factors, the~~
37 ~~certificate holder shall provide to the Department a detailed map of the proposed facility~~
38 ~~showing the final locations where facility components are proposed to be built within the~~
39 ~~500 foot wide corridors shown on Revised Figures C 2 and C 2A of the ASC~~
40 ~~Supplement. [Deleted].~~

41 *Page 5, lines 31-40, and page 6, lines 1-3:*

- 42 (6) If the certificate holder proposes to build the facility in more than one phase using only
43 GE 1.5-MW turbines, GE 3.0-MW turbines or a combination of these two GE turbines,
44 before beginning construction of any phase of the facility and after considering all
45 micrositing factors, the certificate holder shall provide to the Department a detailed map
46 of that phase of the facility showing the final locations where facility components are

1 proposed to be built within the 500-foot-wide corridors shown on Revised Figures C-2
2 and C-2A of the ASC Supplement, shall identify on this map the facilities that would
3 constitute that phase of construction, and shall provide documentation defining the
4 quantities of each of the following components that would constitute that phase of
5 construction: GE 1.5-MW turbines, GE 3.0-MW turbines, pad transformers,
6 meteorological towers, substation, O&M facility, miles of ~~230 kV or 500 kV~~
7 ~~transmission line, miles of aboveground 34.5-kV collector system, miles of access road,~~
8 ~~acres of turnarounds and access road intersections, and acres of temporary laydown area,~~
9 ~~and miles of temporary crane paths.~~

10 *Page 6, lines 4-16:*

- 11 (7) ~~If the certificate holder elects to build the facility in a single phase using any turbines~~
12 ~~other than the GE 1.5 MW turbines or GE 3.0 MW turbines, before beginning~~
13 ~~construction of the facility and after considering all micrositing factors, the certificate~~
14 ~~holder shall provide to the Department a detailed map of the proposed facility showing~~
15 ~~the final locations where facility components are proposed to be built within the 500-~~
16 ~~foot wide corridors shown on Revised Figures C 2 and C 2A of the ASC Supplement.~~
17 ~~The certificate holder shall include with this map documentation defining quantities of~~
18 ~~each of the following components that would constitute the complete facility: turbines,~~
19 ~~pad transformers, meteorological towers, substation, O&M facility, miles of 230 kV or~~
20 ~~500 kV transmission line, miles of aboveground 34.5 kV collector system, miles of~~
21 ~~access road, acres of turnarounds and access road intersections, and acres of temporary~~
22 ~~laydown area. For each turbine, the certificate shall define the turbine manufacturer,~~
23 ~~turbine capacity, weight of steel, height of tower, sweep of blade, and size of concrete~~
24 ~~foundation. [Deleted].~~

25 *Page 6, lines 17-30:*

- 26 (8) If the certificate holder elects to build the facility in more than one phase using any
27 turbines other than the GE 1.5-MW turbines or GE 3.0-MW turbines, before beginning
28 construction of any phase of the facility and after considering all micrositing factors, the
29 certificate holder shall provide to the Department a detailed map of that phase of the
30 facility showing the final locations where facility components are proposed to be built
31 within the 500-foot-wide corridors shown on Revised Figures C-2 and C-2A of the ASC
32 Supplement, shall identify on this map the facilities that would constitute that phase of
33 construction, and shall provide documentation defining the quantities of each of the
34 following components that would constitute that phase of construction: turbines, pad
35 transformers, meteorological towers, substation, O&M facility, miles of ~~230 kV or 500-~~
36 ~~kV transmission line, miles of aboveground 34.5-kV collector system, miles of access~~
37 ~~road, acres of turnarounds and access road intersections, and acres of temporary laydown~~
38 ~~area, and miles of temporary crane paths.~~ For each turbine, the certificate shall define the
39 turbine manufacturer, turbine capacity, weight of steel, height of tower, sweep of blade,
40 and size of concrete foundation.

41 *Page 6, lines 31-45, and page 7, lines 1-15:*

- 42 (9) ~~If the certificate holder elects to build the facility in a single phase using only GE 1.5-~~
43 ~~MW turbines, GE 3.0 MW turbines or a combination of these two GE turbines, before~~
44 ~~beginning construction of the facility the certificate holder shall submit to the State of~~
45 ~~Oregon through the Council a bond or letter of credit in the amount of \$6.208 million (in~~
46 ~~2005 dollars) naming the State of Oregon, acting by and through the Council as~~
47 ~~beneficiary or payee. If the certificate holder elects to build the facility in a single phase~~
48 ~~using any turbines other than the GE 1.5 MW or GE 3.0 MW turbines or if the~~

1 certificate holder elects to build the facility in more than one phase using any
2 combination of turbines, before beginning construction of any phase of the facility, the
3 certificate holder shall submit to the State of Oregon through the Council a bond or letter
4 of credit naming the State of Oregon, acting by and through the Council, as beneficiary
5 or payee in the amount (in 2005 dollars) determined by the Department as the gross cost
6 of demolition and site restoration minus the carbon steel scrap value plus the one percent
7 performance bond amount, ten percent administration and project management costs and
8 twenty percent future developments contingency applicable to the proposed phase of
9 construction, together with any previous phases of construction. If the certificate holder
10 elects to build the facility in more than one phase using only GE 1.5-MW turbines, GE
11 3.0-MW turbines or a combination of the two GE turbines, the Department will establish
12 the amount of the bond or letter of credit by applying the unit costs described in Table 5
13 of the Council's final order on the site certificate application (incorporated herein by this
14 reference) to the number of units identified by the certificate holder and verified by the
15 Department as applicable to the proposed phase and any previous phases of construction
16 and adding to that subtotal the one-percent performance bond amount, ten-percent
17 administration and project management costs and twenty-percent future developments
18 contingency. If the certificate holder elects to build the facility using any turbines other
19 than the GE 1.5-MW turbines or GE 3.0-MW turbines, for each phase of construction
20 the Department will establish the amount of the bond or letter of credit by using its
21 Facility Retirement Cost Estimating Guide to estimate the gross cost of demolition and
22 site restoration minus the carbon steel scrap value plus the one-percent performance
23 bond amount, ten-percent administration and project management costs and twenty-
24 percent future developments contingency.

25 *Page 9, lines 13-18:*

- 26 (21) The certificate holder shall locate access roads and temporary construction laydown and
27 staging areas to minimize disturbance with farming practices and, wherever feasible,
28 shall place turbines and transmission interconnection lines along the margins of
29 cultivated areas to reduce the potential for conflict with farm operations. The certificate
30 holder shall place aboveground ~~transmission and~~ collector lines and junction boxes
31 along property lines and public road rights-of-way to the extent practicable.

32 *Page 14, lines 13-29:*

33 In addition, the certificate holder shall flag the boundaries of the 1300-foot buffer area,
34 or such lesser distance as may be approved by the Department in the event there is an
35 adequate physical barrier between the nest site and the construction impacts, and shall
36 instruct construction personnel to avoid any unnecessary activity within the buffer area.
37 The certificate holder shall direct a qualified ~~independent third party~~ biological monitor,
38 as approved by the Department, to observe the active nest sites during the sensitive
39 period for signs of disturbance and to notify the Department of any non-compliance with
40 this condition. If the monitor observes nest site abandonment or other adverse impact to
41 nesting activity, the certificate holder shall implement appropriate mitigation, in
42 consultation with ODFW and subject to the approval of the Department, unless the
43 adverse impact is clearly shown to have a cause other than construction activity. The
44 certificate holder may begin or resume high impact construction activities before the
45 ending day of the sensitive period if any known nest site is not occupied by the early
46 release date. If a nest site is occupied, then the certificate holder may begin or resume
47 high-impact construction before the ending day of the sensitive period with the approval
48 of ODFW, after the young are fledged. The certificate holder shall use a protocol

1 approved by ODFW to determine when the young are fledged (the young are
2 independent of the core nest site).

3 *Page 15, lines 23-35:*

4 (69) Before beginning construction of any phase of the facility, the certificate holder shall
5 provide to the Department a map showing the final design locations of all components of
6 that phase of the facility and areas that would be temporarily disturbed during
7 construction and also showing the areas surveyed by CH2M Hill and Archaeological
8 Investigations Northwest, Inc. (AINW) in preparing the Cultural Resources Survey for
9 Biglow Canyon Wind Farm included in the site certificate application as Attachment S-
10 4-1 and in Request for Amendment #2 as Attachment 15. The certificate holder shall hire
11 qualified personnel to conduct field investigation of all areas of permanent or temporary
12 disturbance that CH2M Hill and AINW did not previously survey and shall provide to
13 the Department a written report of the field investigation. If any significant historic,
14 cultural or archaeological resources are found during the field investigation, the
15 certificate holder shall ensure that construction and operation of the facility will have no
16 impact on the resources. The certificate holder shall instruct all construction personnel to
17 avoid areas where the resources were found and shall implement other appropriate
18 measures to protect the resources.

19 *Page 18, lines 38-42, and page 19, lines 1-3:*

20 (90) If the GE 1.5-MW turbines (for which the certificate holder states the maximum sound
21 power level warranted by the manufacturer is 104 dBA) or the GE 3.0-MW turbines
22 (provided the certificate holder is able to demonstrate, by means of the manufacturer's
23 warranty or other means acceptable to the Department, that the maximum sound power
24 level of the GE 3.0-MW turbine is 106 dBA) will be used at the facility, before
25 beginning construction, the certificate holder shall present information demonstrating to
26 the satisfaction of the Department that each of the following requirements have been met
27 at all 25 properties identified as noise sensitive properties in the site certificate
28 application, with the exception of the property identified as R14:

29 *Page 10, lines 6-15:*

30 (91) If turbines other than the GE 1.5-MW turbines (for which the certificate holder states the
31 maximum sound power level warranted by the manufacturer is 104 dBA) or the GE 3.0-
32 MW turbines (for which the certificate holder has assumed a maximum sound power
33 level of 106 dBA) will be used at the facility, before beginning construction of the
34 facility the certificate holder shall identify the final design locations of all turbines to be
35 built, perform a complete new noise analysis for all turbines, and generate a new table
36 listing each noise sensitive property, as defined in OAR 340-035-0015(3), identified in
37 the site certificate application, with the exception of the property identified as R14, and
38 the predicted maximum hourly L₅₀ noise level at each noise sensitive property. The
39 certificate holder shall perform the noise analysis using the CADNA/A by DataKustik
40 GmbH of Munich, Germany, and shall assume the following input parameters:

41 *Page 27, following line 14:*

42 VI. CONDITIONS RELATING TO AMENDMENT #2

43 (126) Prior to any disturbance in the areas of the site added in the Final Order for
44 Amendment #2, the certificate holder shall deliver to the Department the results of a
45 spring survey of Crossing G, conducted during the appropriate bloom time for Northern
46 wormwood and Henderson's ricegrass.

1 (127) The certificate holder shall avoid any disturbance, including the placement of poles
2 for the collector line, within 25 feet of the stream channel in the area identified as
3 Crossing G in the Request for Amendment #2.

4 The remaining sections of the site certificate would be renumbered, following the
5 proposed new Section VI, shown above.

6 In addition to proposing changes to the language of the site certificate, PGE proposes
7 changes to the Wildlife Monitoring and Mitigation Plan (incorporated in Condition 61), the
8 Revegetation Plan (incorporated in Condition 62) and the Habitat Mitigation Plan
9 (incorporated in Condition 63). The proposed changes to these plans would adjust the
10 estimated amount of habitat acres that would be affected by the facility due to the changes
11 requested in the amendment. In addition, proposed changes to these plans would give PGE the
12 option to use qualified PGE staff biologists instead of qualified, independent, third-party
13 biologists to perform certain monitoring functions, as discussed below in Section IV.4(b).

14 During the Department's review of the amendment request, PGE asked the
15 Department to consider a change to Condition 50 to allow the use its company logo on up to
16 20 percent of the turbine nacelles.⁴ Condition 50 was included in the site certificate in support
17 of the findings of compliance with OAR 345-024-0015, the Council's Siting Standards for
18 Wind Energy Facilities. PGE asked that its request to modify Condition 50 be included in its
19 amendment request. PGE proposed the language discussed at page 32.

3. Description of the Facility as Authorized by Amendment #2

20 If the Council approves Amendment #2, the certificate holder would be authorized to
21 construct and operate the BCWF facility as described in the Final Order on the Application,
22 except as modified by the changes described below.

Turbine Selection

24 The facility as approved by the Final Order on the Application authorizes the
25 construction of a wind energy facility consisting of up to 225 turbines with a combined peak
26 capacity of up to 450 MW. Before beginning construction of any phase of the project, the
27 certificate holder must submit a detailed configuration plan to the Department, identifying the
28 number, capacity and type of turbines to be built in that phase (Condition 8).

29 The site certificate allows the certificate holder to select the final turbine locations
30 within approved turbine micro-siting corridors, described as "the 500-foot-wide corridors
31 shown on Revised Figures C-2 and C-2A of the ASC Supplement." During the review of this
32 amendment request, the Department asked PGE to provide a written description of these
33 corridors. The description would serve as a basis for formulating the legal description of the
34 site that is required under Condition 102. PGE provided a table of coordinates describing the
35 locations of the turbine micro-siting corridors.⁵

36 PGE's amendment request includes the expansion of one of the previously-approved
37 turbine micro-siting corridors. The proposed expansion would restore the full corridor width
38 that had originally been proposed in the site certificate application. The western half of the

⁴ E-mail from Rick Tetzloff, February 1, 2006.

⁵ E-mail from Rick Tetzloff, March 2, 2007, with attachment ("Site Corridor_Description_3-2-07.xls").

1 proposed corridor was removed from the project before site certificate approval, because the
2 property owner had not granted the rights necessary for the certificate holder to use that area.
3 PGE has since obtained the necessary rights and requests that the western half of the corridor
4 be restored as part of the micrositing corridor. The location of this requested expansion is
5 shown on Figure 1a of the amendment request (labeled as “Full Corridor Width and Facilities
6 Restored”).⁶

7 Power Collection System

8 The current site certificate describes a power collection system consisting of
9 aboveground and underground 34.5-kV transmission lines. The site certificate authorized up
10 to 88.6 miles of collector lines. The lines would be underground, except for aboveground
11 segments necessary in areas of steep terrain or necessary to avoid impacts to high-value
12 habitat or to avoid interference with farming practices. Location of the power collection
13 system is subject to Condition 21, which requires that aboveground collector lines and
14 junction boxes be located along property lines and public road rights-of-way to the extent
15 practicable. The site certificate limits aboveground segments to a combined total of 15 miles.
16 In the site certificate, the proposed locations of collection system components outside of the
17 turbine micrositing corridors were identified by reference to the site certificate application.
18 The Final Order on the Application incorporated by reference Revised Figures C-2 and C-2a
19 of the application to establish the approved location of the facility and its related or supporting
20 facilities.⁷

21 Under the proposed amendment, PGE would be allowed to construct an additional 4.1
22 miles of collector line outside of the previously approved turbine micrositing corridors. The
23 location of three new collector line segments are shown on Figure 1a (labeled “Electrical
24 Route Added). During the review of this amendment request, the Department asked PGE to
25 provide a written description of the location of all project features that would be located
26 outside the turbine micrositing corridors. PGE provided a table of coordinates describing the
27 locations of these features, including micrositing corridors for collector lines.⁸

28 If the Council approves Amendment #2, the certificate holder would be allowed to
29 construct a power collection system that includes up to 99 miles of collector cables. This is an
30 overall increase of 10.4 miles, most of which would be located within the previously-
31 approved turbine corridors.

32 Substations and Interconnection System

33 The site certificate authorized the construction of a project substation. The site
34 certificate authorized two “transmission alternatives,” allowing the certificate holder to
35 choose between two possible locations for the substation.

36 In the amendment request, PGE stated its intention to develop the BCWF under the
37 “second transmission alternative” and to locate the substation in the approved location on

⁶ References to Figure 1a herein are to the figure as revised by e-mail from Rick Tetzloff, March 1, 2007, with attachment (“p1r2Figure1a_3-1-07.pdf”).

⁷ Final Order on the Application, p. 9, fn. 2, and p. 12, lines 1-2. Revised Figures C-2 and C-2a were included in the application supplement.

⁸ E-mail from Rick Tetzloff, March 2, 2007, with attachment (“Site Corridor_Description_3-2-07.xls”).

1 Herin Lane near the center of the site, as shown on Figure 1a.⁹ This intention was not
2 reflected in the proposed amended text of the site certificate, which appeared to preserve two
3 alternative locations for the substation.¹⁰ During the review of the amendment request, the
4 Department asked PGE to clarify the amendment request regarding the substation location.
5 PGE confirmed that it does not intend to use the “Secondary O&M Facility” location shown
6 on Figure 1a as an optional substation location. The Department recommended a revision of
7 the site certificate text to conform to this clarification, as discussed in Revision 5 below.

8 The site certificate authorized the construction of a transmission line to connect the
9 substation with the point of interconnection with the Bonneville Power Administration (BPA)
10 Federal Columbia River Transmission System. The site certificate authorized two
11 transmission line alternatives: a 3-mile transmission line to interconnect at the Klondike
12 Schoolhouse Substation or a 7-mile transmission line to interconnect with new BPA
13 equipment at the John Day Substation or Switchyard.

14 As described in the BPA “Record of Decision for the Klondike III/Biglow Canyon
15 Wind Integration Project,” dated October 25, 2006, and included as Attachment 7 of PGE’s
16 request for Amendment #2, BPA will construct, own and operate a 12-mile transmission line
17 from the Klondike Schoolhouse Substation to a new John Day Substation located next to its
18 existing 500-kV John Day Substation. The BPA transmission line route runs adjacent to the
19 BCWF substation site. BPA will provide interconnection services for the BCWF at the BCWF
20 substation.

21 Because of BPA’s decision to construct the transmission system upgrades described
22 above, it is no longer necessary for the BCWF site certificate to include the two previously-
23 approved alternative transmission lines as related or supporting facilities. The Department
24 recommended that the Council adopt a change to the site certificate to remove the
25 transmission lines as discussed in Revision 5.

26 Meteorological Towers

27 The site certificate authorized the certificate holder to construct up to 10
28 meteorological (met) towers throughout the facility site. Each tower would be up to 85 meters
29 (279 feet) tall. During the review of the amendment request, PGE requested the flexibility to
30 locate met towers within micrositing corridors.¹¹ PGE explained that this flexibility is needed
31 because the met towers must be located within a specific rotor diameter distance from the
32 nearest wind turbine to comply with turbine testing standards. As the wind turbines for each
33 phase are micrositied, the corresponding met towers can be located appropriately within an
34 approved micrositing area. The Department recommended changes to the site certificate to
35 allow this flexibility, as discussed in Revision 2.

36 Operations and Maintenance Building

37 The site certificate authorized three possible locations for the O&M facility. During
38 the review of the amendment request, PGE confirmed that it does not intend to use the
39 “Secondary O&M Facility” location shown on Figure 1a or the location at the site of an

⁹ In the Proposed Order, the Department erroneously referred to “the intersection of Herin Lane and North Klondike Road.” These roads do not intersect.

¹⁰ See page 5 above, PGE’s proposed changes to the site certificate at “Page 3, lines 23-37.”

¹¹ E-mail from Rick Tetzloff, January 16, 2007. The met tower corridors are further described in “Site Corridor_Description_3-2-07.xls” (attachment to e-mail from Rick Tetzloff, March 2, 2007)

1 existing house on Emigrant Lane. The Department recommended amendment of the site
2 certificate text to specify a single approved location for the O&M facility, as discussed in
3 Revision 6.

4 Access Roads

5 As described in the current site certificate, the certificate holder would be allowed to
6 construct approximately 40.5 miles of roads to provide access to the turbine strings. Under the
7 proposed amendment, the certificate holder would be allowed to construct 41.5 miles of
8 access roads. A new access road segment, approximately 0.68 miles in length, would be
9 allowed outside of the previously-approved turbine micro-siting corridors. The location of this
10 new road is shown on Figure 1a (labeled “Road Added”). In addition, PGE proposes to add
11 access road segments within the approved turbine micro-siting corridors. During the review of
12 the amendment request, the Department asked PGE to provide a written description of the
13 location of all project features that would be located outside the turbine micro-siting corridors.
14 PGE provided a table of coordinates describing the locations of these features.¹²

15 Construction Disturbance Areas

16 Under the proposed amendment, the total area of potential disturbance during
17 construction, outside of the area occupied by permanent facility components, would be
18 approximately 416 acres, compared to approximately 388 acres described in the Final Order
19 on the Application.¹³ The increased area of construction disturbance is due to the proposed
20 new access road segments, new collector line segments and crane paths. Allowing the
21 disturbance from crane paths would enable construction to proceed more efficiently by
22 reducing the distance that large construction cranes would have to travel between turbine
23 strings. The locations of proposed crane path disturbance and other construction areas are
24 shown on Figure 1a.

The Site and Site Boundary

25 For the purpose of analysis of the proposed amendment, the “site boundary” is the
26 perimeter of the site of the proposed energy facility, its related or supporting facilities, all
27 construction laydown and staging areas and all micro-siting corridors for turbine strings, roads,
28 collector lines and crane paths, as shown on Figure 1a.

29 As required under Condition 102, before beginning construction of the facility, the
30 certificate holder must determine final locations of turbines, met towers, O&M and substation
31 structures, roads and collector lines and must submit a legal description of the facility site to
32 the Department. The facility “site,” as defined under ORS 469.300, includes all land upon
33 which the energy facility and its related or supporting facilities are located, including
34 permanent site corridors for turbine strings. If Amendment #2 were approved, the site would
35 include the area occupied by the following components:

- 36 • Turbine corridors – The site includes the area within the 500-foot-wide turbine
37 micro-siting corridors as modified by Amendment #2 and described by a table of
38 “Wind Turbine Generator String Coordinates” submitted by PGE.¹⁴

¹² E-mail from Rick Tetzloff, March 2, 2007, with attachment (“Site Corridor_Description_3-2-07.xls”).

¹³ Table 10, Final Order on the Application, p. 99.

¹⁴ E-mail from Rick Tetzloff, March 2, 2007, with attachment (“Site Corridor_Description_3-2-07.xls”).

- 1 • Underground data lines – The site includes the area within 20 feet of the centerline
2 of underground Supervisory Control and Data Acquisition System (SCADA) data
3 lines.
- 4 • Meteorological towers and data lines – The site includes the ten proposed
5 meteorological towers and foundations, each occupying an area of about 900
6 square feet (0.02 acre), and the 20-foot-wide route of the underground SCADA
7 lines to the met towers.
- 8 • Collector transmission lines – The site includes the area within 20 feet of the
9 centerline of all underground and aboveground collector lines.
- 10 • Access roads – The site includes the area within 34 feet of the centerline of all
11 turbine string access roads.¹⁵
- 12 • Substation – The site includes a 6-acre substation area.
- 13 • O&M Building – The site includes a 5-acre site O&M building area.

IV. THE COUNCIL’S SITING STANDARDS: FINDINGS AND CONCLUSIONS

14 The Council must decide whether the amendment complies with the facility siting
15 standards adopted by the Council. In addition, the Council must impose conditions for the
16 protection of the public health and safety, for the time of commencement and completion of
17 construction and for ensuring compliance with the standards, statutes and rules addressed in
18 the project order. ORS 469.401(2).

19 The Council is not authorized to determine compliance with regulatory programs that
20 have been delegated to another state agency by the federal government. ORS 469.503(3).
21 Nevertheless, the Council may consider these programs in the context of its own standards to
22 ensure public health and safety, resource efficiency and protection of the environment.

23 The Council has no jurisdiction over design or operational issues that do not relate to
24 siting, such as matters relating to employee health and safety, building code compliance, wage
25 and hour or other labor regulations, or local government fees and charges. ORS 469.401(4).

26 In making its decision on an amendment of a site certificate, the Council applies the
27 applicable state statutes, administrative rules and local government ordinances that are in
28 effect on the date the Council makes its decision, except when applying the Land Use
29 Standard. In making findings on the Land Use Standard, the Council applies the applicable
30 substantive criteria in effect on the date the certificate holder submitted the request for
31 amendment. OAR 345-027-0070(9).

1. General Standard of Review

32 **OAR 345-022-0000**
33 *(1) To issue a site certificate for a proposed facility or to amend a site certificate,*
34 *the Council shall determine that the preponderance of evidence on the record*
35 *supports the following conclusions:*

¹⁵ Although the width is not specifically stated in the Final Order on the Application, the roads are described as up to 28 feet wide, plus 3-foot shoulders, in the amended language proposed by PGE.

1 (a) *The facility complies with the requirements of the Oregon Energy Facility*
2 *Siting statutes, ORS 469.300 to ORS 469.570 and 469.590 to 469.619, and the*
3 *standards adopted by the Council pursuant to ORS 469.501 or the overall public*
4 *benefits of the facility outweigh the damage to the resources protected by the*
5 *standards the facility does not meet as described in section (2);*

6 (b) *Except as provided in OAR 345-022-0030 for land use compliance and*
7 *except for those statutes and rules for which the decision on compliance has been*
8 *delegated by the federal government to a state agency other than the Council, the*
9 *facility complies with all other Oregon statutes and administrative rules identified*
10 *in the project order, as amended, as applicable to the issuance of a site certificate*
11 *for the proposed facility. If the Council finds that applicable Oregon statutes and*
12 *rules, other than those involving federally delegated programs, would impose*
13 *conflicting requirements, the Council shall resolve the conflict consistent with the*
14 *public interest. In resolving the conflict, the council cannot waive any applicable*
15 *state statute.*

16 * * *

17 We address the requirements of OAR 345-022-0000 in the findings of fact, reasoning,
18 conditions and conclusions of law discussed in the sections that follow. Upon consideration of
19 all of the evidence in the record, we state our general conclusion regarding the amendment
20 request in Section VII.

2. Standards about the Applicant

(a) Organizational Expertise

OAR 345-022-0010

21 (1) *To issue a site certificate, the Council must find that the applicant has the*
22 *organizational expertise to construct, operate and retire the proposed facility in*
23 *compliance with Council standards and conditions of the site certificate. To*
24 *conclude that the applicant has this expertise, the Council must find that the*
25 *applicant has demonstrated the ability to design, construct and operate the*
26 *proposed facility in compliance with site certificate conditions and in a manner*
27 *that protects public health and safety and has demonstrated the ability to restore*
28 *the site to a useful, non-hazardous condition. The Council may consider the*
29 *applicant's experience, the applicant's access to technical expertise and the*
30 *applicant's past performance in constructing, operating and retiring other*
31 *facilities, including, but not limited to, the number and severity of regulatory*
32 *citations issued to the applicant.*

34 (2) *The Council may base its findings under section (1) on a rebuttable*
35 *presumption that an applicant has organizational, managerial and technical*
36 *expertise, if the applicant has an ISO 9000 or ISO 14000 certified program and*
37 *proposes to design, construct and operate the facility according to that program.*

38 (3) *If the applicant does not itself obtain a state or local government permit or*
39 *approval for which the Council would ordinarily determine compliance but*
40 *instead relies on a permit or approval issued to a third party, the Council, to issue*

1 a site certificate, must find that the third party has, or has a reasonable likelihood
2 of obtaining, the necessary permit or approval, and that the applicant has, or has
3 a reasonable likelihood of entering into, a contractual or other arrangement with
4 the third party for access to the resource or service secured by that permit or
5 approval.

6 (4) If the applicant relies on a permit or approval issued to a third party and the
7 third party does not have the necessary permit or approval at the time the Council
8 issues the site certificate, the Council may issue the site certificate subject to the
9 condition that the certificate holder shall not commence construction or operation
10 as appropriate until the third party has obtained the necessary permit or approval
11 and the applicant has a contract or other arrangement for access to the resource
12 or service secured by that permit or approval.

Findings of Fact

13 In the Final Order on Amendment #1, the Council found that PGE has adequate
14 organizational expertise to construct, operate and retire the proposed BCWF. None of the
15 changes proposed by PGE in the request for Amendment #2 affect the organizational
16 expertise available to PGE to design, construct, operate and retire the facility. The Council
17 finds that no changes to Conditions 1, 2, 3 and 4 of the site certificate are needed. The Council
18 finds that the proposed changes would not affect the Council's previous finding and that there
19 have been no changes of circumstances or underlying facts that would affect that finding.

Conclusions of Law

20 Based on the findings stated above, the Council concludes that PGE would meet the
21 Council's Organizational Expertise Standard if Amendment #2 were approved.

(b) Retirement and Financial Assurance

OAR 345-022-0050

22 To issue a site certificate, the Council must find that:

23 (1) The site, taking into account mitigation, can be restored adequately to a useful,
24 non-hazardous condition following permanent cessation of construction or
25 operation of the facility.
26

27 (2) The applicant has a reasonable likelihood of obtaining a bond or letter of
28 credit in a form and amount satisfactory to the Council to restore the site to a
29 useful, non-hazardous condition.

Findings of Fact

A. Site Restoration

30 The Department analyzed the effect of the proposed changes in the facility on the
31 estimated cost of site restoration. Under Amendment #2, the following proposed changes
32 could affect the cost of site restoration:

- 33 • Increased area occupied by access roads
- 34 • Elimination of aboveground 230-kV or 500kV transmission lines

- 1 • Additional area of site restoration disturbance beyond the footprint

2 Site restoration would be done as described in the Final Order on the Application.
3 Approval of Amendment #2 would not affect the Council's previous finding that the site can
4 be adequately restored to a useful, non-hazardous condition.

B. Estimated Cost of Site Restoration

5 To provide a fund that is adequate for the State of Oregon to bear the cost of site
6 restoration if the certificate holder fails to fulfill its obligations, the Council assumes
7 circumstances under which the restoration cost would be greatest. In the Final Order on the
8 Application, the Council found that the greatest site restoration cost would result from the
9 "150-turbine John Day Alternative." Under this configuration, the certificate holder was
10 authorized to construct 150 GE 3.0-MW turbines with a 7-mile transmission line
11 interconnecting the facility with the BPA John Day Substation. The Council estimated the site
12 restoration cost under that configuration would be \$6.208 million (2005 dollars). Condition 9
13 of the site certificate requires the certificate holder to submit a bond or letter of credit in this
14 amount (adjusted to present value) if the certificate holder chooses to build the facility in a
15 single phase using only GE 1.5-MW turbines and GE 3.0-MW turbines.

16 After submitting the Request for Amendment #2, PGE notified the Department of its
17 intention to begin a phased construction of the BCWF. In Phase 1, PGE proposed to build 76
18 wind turbines, two met towers, a substation, an O&M facility, approximately 14 miles of
19 access road and related components of the power collection system. In Phase 1, PGE
20 proposed to use Vestas V82 1.65-MW wind turbines. Under Condition 9, if the certificate
21 holder chooses to use a turbine type other than the GE 1.5-MW or 3.0-MW turbines described
22 in the site certificate, the Department is to establish the financial assurance amount for Phase
23 1 based on the same methodology the Department used to develop the unit costs for the GE
24 1.5-MW turbines and GE 3.0-MW turbines.¹⁶

¹⁶ The "Facility Retirement Cost Estimating Guide" referenced in the site certificate is a cost-estimating method that the Department uses to estimate retirement costs. In agreeing to the terms and conditions of the site certificate, PGE has agreed to the use of the Guide as a method of estimating site restoration costs.

Table 1: Phase 1 Cost Estimate for Site Restoration

Cost Estimate Component	Quantity	Unit Cost	Extension
Turbines			
Disconnect electrical and ready for disassembly (per turbine)	76	\$953	\$72,428
Remove turbine blades, hubs and nacelles (per turbine)	76	\$5,058	\$384,408
Remove turbine towers (per net ton of steel)	16,720	\$65	\$1,086,800
Remove and load pad transformers (per turbine)	76	\$2,186	\$166,136
Foundation and transformer pad removal (per cubic yard of concrete)	13,528	\$31	\$419,368
Restore turbine turnouts (per turbine)	76	\$1,186	\$90,136
Met Towers			
Dismantle and dispose of met towers (per tower)	2	\$8,348	\$16,696
Substation and O&M Building			
Dismantle and dispose of substation	1	\$215,244	\$215,244
Dismantle and dispose of O&M building	1	\$103,608	\$103,608
Transmission Lines			
Removal of 34.5 kV aboveground transmission line (per mile)	0.1	\$3,851	\$385
Junction boxes - remove electrical to 4' below grade (each)	7	\$1,284	\$8,988
Access Roads			
Road removal, grading and seeding (per mile)	14.28	\$47,450	\$677,586
Access road intersection and turnaround removal (per acre)	2.13	\$18,539	\$39,488
Temporary Areas			
Restore area disturbed during restoration work (per acre)	72.93	\$2,696	\$196,619
General Costs			
Permits, mobilization, engineering, overhead, utility disconnects			\$431,183
Gross Cost (2005 Dollars)			\$3,909,073
Less scrap value (per ton, 2005 dollars)	16,720	(\$149)	(\$2,491,280)
Adjusted Gross Cost (1 st Quarter 2007 dollars) ¹⁷			\$4,080,604
Less adjusted scrap value (Condition 9(a)(ii)) ¹⁸			(\$2,853,468)
Subtotal			\$1,227,136
Performance Bond		1%	\$12,271
Administration and Project Management		10%	\$122,714
Future Developments Contingency		20%	\$245,427
Total Site Restoration Cost (rounded to nearest \$1,000)			\$1,608,000

1 Table 1 shows the financial assurance amount for Phase 1 as established by the
2 Department. PGE submitted a letter of credit in the amount of \$1.608 million before
3 beginning construction of Phase 1.

4 As a result of concerns expressed by Council members regarding the adequacy of
5 financial assurance, the Department conducted an internal review of the risks involved in
6 allowing a deduction for scrap or salvage value in calculating the financial assurance amount.
7 In recent site certificate proceedings (including the BCWF proceedings), the Department
8 based its recommendations on the understanding that the State would have an enforceable
9 claim to the scrap value unencumbered by the claims of creditors or other third parties. In a

¹⁷ In accordance with Condition 9, the gross cost in 2005 dollars is adjusted to present value by application of the Gross Domestic Product (GDP) Implicit Price Deflator for the first quarter 2007 divided by the annual GDP Implicit Price Deflator for 2005 or 117.6907/112.7435.

¹⁸ In accordance with Condition 9, the estimated carbon steel scrap value is adjusted by application of the average monthly Producer Price Index (PPI) value for carbon steel scrap for the twelve months ending with December 2006 divided by the average monthly PPI value for carbon steel scrap for the twelve months ending with December 2005 or 317.5/277.2.

1 memo dated December 8, 2006, to site certificate holders and applicants, the Department
2 concluded that there was a significant risk that the scrap or salvage value might be
3 inaccessible and unavailable to the State. After internal discussion and a presentation of the
4 issue to the Council, the Department recommended that in pending and future site certificate
5 proceedings, the Council should not include a deduction for scrap or salvage value in
6 calculating the appropriate financial assurance amount.

7 The facts and circumstances underlying the Council's previous findings regarding
8 financial assurance have changed due to: (1) PGE's decision to build the BCWF in phases
9 using turbines other than GE 1.5-MW or 3.0-MW turbines; and (2) the Department's
10 reevaluation of the issue and recommendation that the scrap or salvage value of the turbines
11 should not be deducted because it may not be recoverable at the time of site restoration. The
12 Council, therefore, must re-evaluate the appropriate financial assurance amount based on the
13 estimated cost of site restoration if the certificate holder fails to fulfill its obligations,
14 assuming circumstances under which the restoration cost would be greatest.

15 With respect to Phase 1 and as detailed in Table 1, the Department's gross cost
16 estimate of the amount necessary to restore the site is \$3,909,060 (in 2005 dollars), not
17 including recommended adders for the performance bond, administration and project
18 management costs and future developments contingency. In commenting on a draft of the
19 Department's proposed order on this amendment, PGE questioned whether a 20-percent
20 future developments contingency adder was appropriate, given the Department's
21 recommendation to eliminate a deduction for scrap value. Without a deduction for scrap
22 value, the estimated gross cost of site restoration is substantially higher, and because the
23 contingency adder is based on a percentage of estimated gross costs, the dollar amount of a
24 20-percent contingency adder is substantially higher as well.

25 The Department reconsidered the contingency adder in light of PGE's comments. A
26 future developments contingency adder is needed to account for uncertainty in estimating the
27 future costs of site restoration. If site restoration becomes necessary, it might be many years in
28 the future. Other factors contribute to uncertainty; for example, different environmental
29 standards or other legal requirements might be in place in the future, changes in the location
30 of available disposal sites or the cost of disposal of demolition debris could affect restoration
31 costs and the costs of labor and equipment might increase over time at a rate exceeding the
32 standard inflation adjustment.

33 Reducing the future developments contingency adder for the BCWF may be justified,
34 based on the following considerations:

- 35 • The risk that the facility might become uneconomical to operate, resulting in a
36 default by the certificate holder and the consequent necessity for the Council to
37 restore the site, is not as great for wind energy facilities compared to other types of
38 energy facilities because the "fuel" is both renewable and available at the location
39 of the generator. Wind facilities have no exposure to the cost and supply
40 uncertainties of a fuel market and are not dependent on a fuel delivery system. No

1 pipelines or other infrastructure are needed to bring the “fuel” to the location
2 where the power is generated. Instead, wind turbines are located where an
3 adequate wind energy resource can be found, and the “fuel” is available at no cost.

- 4 • There is little or no risk of an unanticipated hazardous material leak or spill that
5 could result in significant future clean-up costs. Unlike other energy facilities, a
6 wind facility has no on-site storage tanks containing hazardous materials. Only
7 small quantities of hazardous materials (lubricants, oils, greases, antifreeze,
8 cleaners, degreasers and hydraulic fluids) are used or stored on-site. Wind turbine
9 nacelles are designed to contain any spillage that might occur during servicing of
10 the wind turbines.
- 11 • Operators of wind facilities have the option to “re-power” the facility by replacing
12 individual turbines rather than shutting down the entire facility, unlike other types
13 of energy generation facilities that have a more limited useful life. The modular
14 nature of a wind energy facility makes it possible to replace individual turbines
15 when they become uneconomical to operate. This feature increases the long-term
16 economic viability of a wind facility and reduces the risk of facility closure and
17 default by the certificate holder.

18 For the reasons discussed above, there is a reduced risk of unanticipated site
19 restoration costs that would be borne by the State due to uncertain future developments. In
20 consideration of the reduced risk, the Council finds that the future developments contingency
21 adder for the BCWF can be reduced from 20-percent to 10-percent.

22 The Department recommended that the Council retain the 1-percent Performance
23 Bond and 10-percent Administration and Project Management adders. A demolition
24 contractor would include the cost of a performance bond in the amount of the bid for the job.
25 The bond cost is generally a percentage of the contract amount, based what is common in the
26 industry. The State does not set the percentage. The Department believes that 1-percent is a
27 conservative estimate for this bond, although it could be more. The Department believes that
28 administration and project management costs should be based on the true gross cost of site
29 restoration. Under the current site certificate, administrative and project management costs are
30 instead based on gross cost less scrap value. This gives an unintended additional “credit” for
31 scrap value by lowering the funds available for administration and project management.

32 Table 2 shows a revised estimate for site restoration, based on the facility components
33 being built by PGE in Phase 1. The estimate removes the scrap value deduction and applies
34 the performance bond adder, the administration and project management adder and a reduced
35 future developments contingency adder to the gross cost. The Council finds that the financial
36 assurance amount for Phase 1 is \$4.73 million (in 2005 dollars), as shown in Table 2.

Table 2: Phase 1 Site Restoration Cost Estimate (no deduction for scrap value)

Gross Cost (2005 Dollars)		\$3,909,060
Performance Bond	1%	\$39,091
Administration and Project Management	10%	\$390,906
Future Developments Contingency	10%	\$390,906
Total Site Restoration Cost (2005 dollars, rounded to nearest \$1,000)		\$4,730,000

1 The site certificate authorizes the construction of up to 450 MW of wind generation
2 (peak capacity) and up to 225 wind turbines.¹⁹ In Phase 1, PGE will build 76 turbines and
3 125.4 MW of generating capacity. PGE has not determined how much additional generating
4 capacity could be built within the balance of the approved micrositing area, and PGE has not
5 decided what turbine type it would use in future phases or the number of turbines it would
6 build. PGE notes that the wind resource and available land impose natural restrictions on how
7 many turbines and what size turbines can be installed economically at the BCWF. PGE has
8 requested that the limit of 225 turbines or 450 MW be retained under the site certificate to
9 provide a conservative envelope for estimating impacts and site restoration costs for the full
10 build-out of the project.²⁰

11 Based on the range of generating capacity and total number of turbines as described in
12 the Final Order on the Application, the Department re-analyzed site restoration costs for the
13 full project build-out. The Department used the line items and unit costs shown above for
14 Phase 1 but eliminated the interconnection transmission lines (that would be removed under
15 Amendment #2). The Department did not include any deduction for scrap value, but the
16 Department reduced the future developments contingency adder to 10-percent. The
17 Department's analysis demonstrated that a project consisting of 225 1.5-MW turbines would
18 result in the highest estimated site restoration cost. This result differs from the Council's
19 finding in the Final Order on the Application that the 150-turbine "John Day Alternative"
20 would produce the highest estimated site restoration cost.²¹ The estimated site restoration
21 costs (in 2005 dollars), assuming a 225 turbine configuration, are detailed below in Table 3.

¹⁹ As described in the Final Order on the Application, a maximum of 450 MW of generating capacity could be developed if each turbine had a 3.0-MW capacity and as many as 225 turbines could be built if each turbine had a generating capacity of 1.5-MW.

²⁰ E-mail from Rick Tetzloff, February 6, 2007.

²¹ Final Order on the Application, p. 21. The earlier analysis used an overstated estimate of the amount of concrete that would have to be removed from turbine foundations for the 3.0-MW turbines, based on the information that was available to the Department at the time. This largely accounts for the different result.

Table 3: Cost Estimate for Site Restoration (Full Build-Out)

Cost Estimate Component	Quantity	Unit Cost	Extension
<u>Turbines</u>			
Disconnect electrical and ready for disassembly (per turbine)	225	\$953	\$214,425
Remove turbine blades, hubs and nacelles (per turbine)	225	\$5,058	\$1,138,050
Remove turbine towers (per net ton of steel)	49,500	\$65	\$3,217,500
Remove and load pad transformers (per turbine)	225	\$2,186	\$491,850
Foundation and transformer pad removal (per cubic yard of concrete)	40,050	\$31	\$1,241,550
Restore turbine turnouts (per turbine)	225	\$1,186	\$266,850
<u>Met Towers</u>			
Dismantle and dispose of met towers (per tower)	10	\$8,348	\$83,480
<u>Substation and O&M Building</u>			
Dismantle and dispose of substation	1	\$215,244	\$215,244
Dismantle and dispose of O&M building	1	\$103,608	\$103,608
<u>Transmission Line</u>			
Removal of 34.5 kV aboveground transmission line (per mile)	15	\$3,851	\$57,765
Junction boxes - remove electrical to 4' below grade (each)	25	\$1,284	\$32,100
<u>Access Roads</u>			
Road removal, grading and seeding (per mile)	41.54	\$47,450	\$1,971,073
Access road intersection and turnaround removal (per acre)	12.23	\$18,539	\$226,732
<u>Off-Footprint Disturbance During Site Restoration</u>			
Restore area disturbed during restoration work (per acre)	156	\$2,696	\$420,576
<u>General Costs</u>			
Permits, mobilization, engineering, overhead, utility disconnects			\$431,183
Gross Cost (2005 Dollars)			\$10,111,986
Performance Bond		1%	\$101,120
Administration and Project Management		10%	\$1,011,199
Future Developments Contingency		10%	\$1,011,199
Total Site Restoration Cost (rounded to nearest \$1,000)			\$12,236,000

1 For the purpose of determining whether PGE has a reasonable likelihood of obtaining
2 a bond or letter of credit in an amount satisfactory to the Council to restore the site, the
3 Council finds that the estimated cost of site restoration is \$12.236 million (in 2005 dollars).
4 This is a conservative estimate of the cost of restoring the site if the BCWF were fully
5 constructed as allowed under the site certificate.

C. Ability of PGE to Obtain a Bond or Letter of Credit

6 In the Final Order on Amendment #1, the Council found that it was reasonably likely
7 that PGE could obtain a letter of credit in a satisfactory amount. The Council based its finding
8 on a letter from JPMorgan Chase Bank, N.A., stating the bank's willingness to "furnish or
9 arrange a letter of credit in an amount up to \$10 million for a period not to exceed four years,
10 for the purpose of ensuring...Portland General Electric Co.'s obligations that the site of the
11 proposed Biglow Canyon Wind Farm Project can be restored to a useful non-hazardous
12 condition." Based on the revised calculation of the cost of site restoration, the Council must
13 decide whether PGE can obtain a bond or letter of credit in the amount of \$12.236 million (in
14 2005 dollars). PGE has submitted a letter from JPMorgan Chase Bank, N.A., stating the

1 bank's willingness to "furnish or arrange a letter of credit in an amount up to \$20 million for a
2 period not to exceed four years for the purpose of ensuring Portland General Electric
3 Company's obligations that the site of the proposed Biglow Canyon Wind Farm Project can
4 be restored to a useful non-hazardous condition."²² The Council finds that it is reasonably
5 likely that PGE can obtain a bond or letter of credit in a form and amount satisfactory to the
6 Council to restore the site.

7 The Council agrees that Conditions 5, 6 and 7 can be removed from the site certificate,
8 as proposed by PGE, because those conditions would apply only if PGE elected to build the
9 facility in a single phase or to use only GE 1.5-MW or 3.0-MW turbines. PGE has elected to
10 build the facility in multiple phases using other turbines. The Council modifies Conditions 8
11 and 9 as discussed in Revisions 12 and 13.

Conclusions of Law

12 Based on proposed findings and recommendations stated above, the Council concludes
13 that PGE would meet the Council's Retirement and Financial Assurance Standard if
14 Amendment #2 were approved.

3. Standards about the Impacts of Construction and Operation

(a) Land Use

OAR 345-022-0030

15 *(1) To issue a site certificate, the Council must find that the proposed facility*
16 *complies with the statewide planning goals adopted by the Land Conservation and*
17 *Development Commission.*

18 *(2) The Council shall find that a proposed facility complies with section (1) if:*

19 ***

20 *(b) The applicant elects to obtain a Council determination under ORS*
21 *469.504(1)(b) and the Council determines that:*

22 *(A) The proposed facility complies with applicable substantive criteria as*
23 *described in section (3) and the facility complies with any Land Conservation and*
24 *Development Commission administrative rules and goals and any land use statutes*
25 *directly applicable to the facility under ORS 197.646(3);*

26 *(B) For a proposed facility that does not comply with one or more of the*
27 *applicable substantive criteria as described in section (3), the facility otherwise*
28 *complies with the statewide planning goals or an exception to any applicable*
29 *statewide planning goal is justified under section (4); or*

30 *(C) For a proposed facility that the Council decides, under sections (3) or*
31 *(6), to evaluate against the statewide planning goals, the proposed facility*
32 *complies with the applicable statewide planning goals or that an exception to any*
33 *applicable statewide planning goal is justified under section (4).*

34 *(3) As used in this rule, the "applicable substantive criteria" are criteria from the*
35 *affected local government's acknowledged comprehensive plan and land use*
36

²² Letter from Helen Davis, JPMorgan Chase Bank, to James Warberg, PGE, dated February 21, 2007.

1 ordinances that are required by the statewide planning goals and that are in effect
2 on the date the applicant submits the application. If the special advisory group
3 recommends applicable substantive criteria, as described under OAR 345-021-
4 0050, the Council shall apply them. If the special advisory group does not
5 recommend applicable substantive criteria, the Council shall decide either to make
6 its own determination of the applicable substantive criteria and apply them or to
7 evaluate the proposed facility against the statewide planning goals.

8 (4) The Council may find goal compliance for a proposed facility that does not
9 otherwise comply with one or more statewide planning goals by taking an
10 exception to the applicable goal. Notwithstanding the requirements of ORS
11 197.732, the statewide planning goal pertaining to the exception process or any
12 rules of the Land Conservation and Development Commission pertaining to the
13 exception process, the Council may take an exception to a goal if the Council
14 finds:

15 (a) The land subject to the exception is physically developed to the extent that
16 the land is no longer available for uses allowed by the applicable goal;

17 (b) The land subject to the exception is irrevocably committed as described by
18 the rules of the Land Conservation and Development Commission to uses not
19 allowed by the applicable goal because existing adjacent uses and other relevant
20 factors make uses allowed by the applicable goal impracticable; or

21 (c) The following standards are met:

22 (A) Reasons justify why the state policy embodied in the applicable goal
23 should not apply;

24 (B) The significant environmental, economic, social and energy
25 consequences anticipated as a result of the proposed facility have been identified
26 and adverse impacts will be mitigated in accordance with rules of the Council
27 applicable to the siting of the proposed facility; and

28 (C) The proposed facility is compatible with other adjacent uses or will be
29 made compatible through measures designed to reduce adverse impacts.

30 * * *

Findings of Fact

31 In the Final Order on the Application, the Council found the proposed BCWF would
32 comply with the statewide planning goals, based on a land use analysis under ORS
33 469.504(1)(b)(B). The Council found that Special Advisory Group appointed for the BCWF
34 (the governing body of Sherman County) had not identified applicable substantive criteria.
35 The Council, in accordance with ORS 469.504(5), determined that Article 5 of the Sherman
36 County Zoning Ordinance (SCZO) contained the applicable substantive criteria and applied
37 those criteria. The Council found that the BCWF did not comply with all of the criteria.
38 Specifically, the facility did not comply with SCZO Sections 5.2.1,²³ 3.1.4²⁴ and 5.8.16(d).²⁵

²³ SCZO Section 5.2.1 requires that the facility be compatible with the Sherman County Comprehensive Plan (SCCP) and applicable policies. The Council found that the BCWF did not comply with Policy III under SCCP Goal XVIII. Policy III requires "new high voltage electrical transmission lines with nominal voltage in excess of

1 In accordance with ORS 469.504(1)(b)(B), the Council then considered whether the
 2 facility complied with the applicable statewide planning goal (Goal 3). The Council found
 3 that the facility did not comply with Goal 3 because it would exceed the acreage limitations
 4 for a “power generation facility” located on farmland as set out in OAR 660-033-0130(17) for
 5 high-value farmland and in OAR 660-033-0130(22) for non-high-value farmland. The
 6 Council found that the “principal use” and the access roads were subject to the acreage
 7 restrictions and that these components would occupy approximately 170.7 acres of
 8 farmland.²⁶ Nevertheless, the Council found that an exception to Goal 3 was justified under
 9 the standards required by ORS 469.504(2)(c).

10 Under the proposed amendment, the previously-approved 230-kV or 500-kV
 11 transmission line would be eliminated from the BCWF. The facility would, therefore, comply
 12 with SCZO Section 5.2.1. Analysis under ORS 469.504(1)(b)(B) is still necessary though,
 13 because the facility would not comply with SCZO Sections 3.1.4 and 5.8.16(d).

14 The proposed changes would increase the amount of farmland occupied by the
 15 principal use and access roads from approximately 170.7 acres to approximately 173.45 acres,
 16 as shown in Table 4.²⁷

Table 4: Area Occupied by the Power Generation Facility

Structure	Acres
Principal use	
Turbine towers, including pad areas and road turnouts	14.13
Meteorological towers	0.21
Aboveground 34.5 kV collector line ²⁸	0.18
O&M building site	4.80
Subtotal	19.32
Access roads	154.13
Total	173.45

230 kV” to be constructed within or adjacent to existing electrical transmission line right-of-way. Because the proposed facility included a 230-kV or 500-kV transmission line that would not be “within or adjacent to” an existing transmission line right-of-way, the Council found non-compliance with SCZO Section 5.2.1.

²⁴ The Council interpreted SCZO Section 3.1.4 to require a 30-foot setback for facility structures including transmission lines and junction boxes. The applicant requested an exception for transmission lines and junction boxes from the setback required under Condition 20. The Council allowed the exception but found as a consequence that the facility did not comply with SCZO Section 3.1.4.

²⁵ SCZO Section 5.8.16(d) requires that the facility be located on land “generally unsuitable” for crop production or livestock. The Council found that the BCWF would be located on land suitable for crop production because the site was located on approximately 157 acres of land that was being used for non-irrigated crop production. The Council found, therefore, that the facility did not comply with SCZO Section 5.8.16(d).

²⁶ The Council found that the other facility components (the substation and aboveground transmission line) would be “utility facilities necessary for public service” allowed on EFU land under ORS 215.283(1)(d), subject to the provisions of ORS 215.275. The Council found that the substation and transmission line satisfied the requirements.

²⁷ Table 4 is based on PGE’s revised calculation of the area occupied by the principal use and access roads (e-mail from Rick Tetzloff, March 1, 2007).

²⁸ Department estimate based on experience with similar facilities, assuming 15 miles of transmission line, 21 transmission poles per mile and 25 sq. ft. of farmland precluded per pole.

1 The facility would exceed the acreage limitations of OAR 660-033-0130(17) and OAR
2 660-033-0130(22). The Council must find, therefore, that an exception to Goal 3 would be
3 justified. The changes in the facility that would be authorized under the requested amendment
4 would alter design and construction details but would not change the proposed land use. The
5 facility access roads would occupy about 3 additional acres of agricultural land, but this
6 incremental acreage would be contiguous with acreage used by the facility as previously
7 approved.

8 The facts underlying the Council's previous findings in support of a "reasons"
9 exception under ORS 469.504(2)(c) would not be significantly different if the Council were to
10 approve Amendment #2.²⁹ In summary, with the proposed changes, the facility would still
11 occupy less than one percent of the actively farmed land adjacent to the facility.³⁰ The
12 proposed changes would not alter the spacing of turbines and turbine strings. The changes
13 would preserve most of the land upon which the facility lies for farm use, and the new access
14 road segments would be available for use in farm operations. The proposed changes would
15 allow accepted farm practices in the area (soil preparation in the spring and fall, sowing,
16 fertilizing, pest and weed management and harvesting) to occur without serious interference.
17 Approval of the facility, with the proposed amendments, furthers the state energy
18 conservation policy embodied in Goal 13 by using renewable energy sources. As discussed in
19 the Final Order on the Application and herein, the significant environmental, economic, social
20 and energy consequences anticipated as a result of the proposed facility have been identified
21 and adverse impacts will be mitigated. Conditions 18, 19, 21, 22 and 23, all of which help to
22 ensure the compatibility of the facility with farming operations, would apply to the entire
23 facility, including the additions that would be allowed under the amendment. For these
24 reasons, the Council finds that the standards for an exception to Goal 3 under ORS
25 469.504(2)(c) would continue to be met if Amendment #2 were approved. The changes
26 authorized under the amendment do not substantially alter the underlying facts upon which
27 the Council based its previous findings and conclusions regarding land use.

28 PGE proposed a modification of Condition 21 to reflect the removal of the 115-kV or
29 230-kV transmission lines from the project. The Council modifies Condition 21 as requested
30 by PGE and as discussed below in Revision 15. The Council finds that no other changes to the
31 site certificate conditions related to land use (Conditions 17 through 25) are needed.

Conclusions of Law

32 Based on the findings stated above, the Council concludes that an exception to Goal 3
33 is justified and that the BCWF would comply with the Council's Land Use Standard if
34 Amendment #2 were approved.

(b) Soil Protection

OAR 345-022-0022

35 *To issue a site certificate, the Council must find that the design, construction,*
36 *operation and retirement of the facility, taking into account mitigation, are not*
37

²⁹ The "reasons" exception is discussed in the Final Order on the Application, pp. 61-63.

³⁰ In the Final Order on the Application (p. 50), the Council assumed that 20,000 acres of land within the lease area was in use as farmland. The area occupied by the principal use and access roads (173.45 acres) represents 0.9 percent of the total farmland.

1 *likely to result in a significant adverse impact to soils including, but not limited to,*
2 *erosion and chemical factors such as salt deposition from cooling towers, land*
3 *application of liquid effluent, and chemical spills.*

Findings of Fact

4 In the Final Order on the Application, the Council found that the design, construction,
5 operation and retirement of the proposed BCWF, taking into account mitigation and subject to
6 the conditions stated in the order, would not likely cause a significant adverse impact to soils.
7 The changes proposed in the request for Amendment #2 would increase the permanent
8 footprint by about 5.6 acres and would increase the area of construction disturbance (outside
9 the permanent footprint) by approximately 28.6 acres.

10 The addition of crane paths accounts a portion of the additional temporary disturbance
11 during construction. Allowing for the movement of large turbine assembly cranes across
12 farmland would reduce the distance that the cranes would have to travel from one turbine
13 string to the next. The use of crane paths could result in area of soil compaction. The
14 certificate holder would restore areas of soil compaction in accordance with the Revegetation
15 Plan (Attachment B) when the route is no longer needed for facility construction.

16 Approval of Amendment #2 would not otherwise change the facts on which the
17 Council relied in its previous findings regarding impact to soils. The Council finds that no
18 changes to the site certificate conditions related to soil protection (Conditions 26 through 35)
19 are needed. The Council finds that the design, construction, operation and retirement of the
20 BCWF as modified by Amendment #2 would not likely result in significant adverse impact to
21 soils, taking into account the mitigation required by the site certificate conditions.

Conclusions of Law

22 The Council concludes that the BCWF would comply with the Council's Soil
23 Protection Standard if Amendment #2 were approved.

(c) Protected Areas

OAR 345-022-0040

24 *(1) Except as provided in sections (2) and (3), the Council shall not issue a site*
25 *certificate for a proposed facility located in the areas listed below. To issue a site*
26 *certificate for a proposed facility located outside the areas listed below, the*
27 *Council must find that, taking into account mitigation, the design, construction*
28 *and operation of the facility are not likely to result in significant adverse impact to*
29 *the areas listed below. Cross-references in this rule to federal or state statutes or*
30 *regulations are to the version of the statutes or regulations in effect as of August*
31 *28, 2003:*
32

33 *(a) National parks, including but not limited to Crater Lake National Park and*
34 *Fort Clatsop National Memorial;*

35 *(b) National monuments, including but not limited to John Day Fossil Bed*
36 *National Monument, Newberry National Volcanic Monument and Oregon Caves*
37 *National Monument;*

1 (c) *Wilderness areas established pursuant to The Wilderness Act, 16 U.S.C.*
2 *1131 et seq. and areas recommended for designation as wilderness areas pursuant*
3 *to 43 U.S.C. 1782;*

4 (d) *National and state wildlife refuges, including but not limited to Ankeny,*
5 *Bandon Marsh, Baskett Slough, Bear Valley, Cape Meares, Cold Springs, Deer*
6 *Flat, Hart Mountain, Julia Butler Hansen, Klamath Forest, Lewis and Clark,*
7 *Lower Klamath, Malheur, McKay Creek, Oregon Islands, Sheldon, Three Arch*
8 *Rocks, Umatilla, Upper Klamath, and William L. Finley;*

9 (e) *National coordination areas, including but not limited to Government*
10 *Island, Ochoco and Summer Lake;*

11 (f) *National and state fish hatcheries, including but not limited to Eagle Creek*
12 *and Warm Springs;*

13 (g) *National recreation and scenic areas, including but not limited to Oregon*
14 *Dunes National Recreation Area, Hell's Canyon National Recreation Area, and*
15 *the Oregon Cascades Recreation Area, and Columbia River Gorge National*
16 *Scenic Area;*

17 (h) *State parks and waysides as listed by the Oregon Department of Parks and*
18 *Recreation and the Willamette River Greenway;*

19 (i) *State natural heritage areas listed in the Oregon Register of Natural*
20 *Heritage Areas pursuant to ORS 273.581;*

21 (j) *State estuarine sanctuaries, including but not limited to South Slough*
22 *Estuarine Sanctuary, OAR Chapter 142;*

23 (k) *Scenic waterways designated pursuant to ORS 390.826, wild or scenic*
24 *rivers designated pursuant to 16 U.S.C. 1271 et seq., and those waterways and*
25 *rivers listed as potentials for designation;*

26 (L) *Experimental areas established by the Rangeland Resources Program,*
27 *College of Agriculture, Oregon State University: the Prineville site, the Burns*
28 *(Squaw Butte) site, the Starkey site and the Union site;*

29 (m) *Agricultural experimental stations established by the College of*
30 *Agriculture, Oregon State University, including but not limited to:*

31 *Coastal Oregon Marine Experiment Station, Astoria*

32 *Mid-Columbia Agriculture Research and Extension Center, Hood River*

33 *Agriculture Research and Extension Center, Hermiston*

34 *Columbia Basin Agriculture Research Center, Pendleton*

35 *Columbia Basin Agriculture Research Center, Moro*

36 *North Willamette Research and Extension Center, Aurora*

37 *East Oregon Agriculture Research Center, Union*

38 *Malheur Experiment Station, Ontario*

1 *Eastern Oregon Agriculture Research Center, Burns*
2 *Eastern Oregon Agriculture Research Center, Squaw Butte*
3 *Central Oregon Experiment Station, Madras*
4 *Central Oregon Experiment Station, Powell Butte*
5 *Central Oregon Experiment Station, Redmond*
6 *Central Station, Corvallis*
7 *Coastal Oregon Marine Experiment Station, Newport*
8 *Southern Oregon Experiment Station, Medford*
9 *Klamath Experiment Station, Klamath Falls;*

10 *(n) Research forests established by the College of Forestry, Oregon State*
11 *University, including but not limited to McDonald Forest, Paul M. Dunn Forest,*
12 *the Blodgett Tract in Columbia County, the Spaulding Tract in the Mary's Peak*
13 *area and the Marchel Tract;*

14 *(o) Bureau of Land Management areas of critical environmental concern,*
15 *outstanding natural areas and research natural areas;*

16 *(p) State wildlife areas and management areas identified in OAR chapter*
17 *635, Division 8.*

18 * * *

Findings of Fact

19 In the Final Order on the Application, the Council found that the BCWF would not be
20 located in any protected area as defined by OAR 345-022-0040(1) and that the design,
21 construction and operation of the facility would not result in significant adverse impact to any
22 protected area, taking into account mitigation and subject to the conditions included in the site
23 certificate. The Council found that indirect effects of noise, traffic, water use and visual
24 impact from the BCWF would not have any significant impact on protected areas.

25 Approval of Amendment #2 would allow construction and operation of road segments
26 and collector lines outside of the previously permitted site boundary but within the certificate
27 holder's lease boundary. The proposed amendment would not increase the maximum length
28 of aboveground collector line authorized for construction. The expansion of the site boundary
29 does not significantly increase the analysis area and does not affect any protected areas not
30 considered by the Council in the Final Order on the Application.

31 The changes to the facility that would be allowed if Amendment #2 were approved
32 would not substantially change the facts on which the Council relied in its previous findings
33 regarding potential noise, traffic, water and wastewater impacts and visual impacts. Although
34 the amendment would allow alterations in the boundaries of one micrositing corridor, the
35 certificate holder would not otherwise construct any turbines outside of the previously-
36 approved corridors. The Council finds that no change to Condition 36 (regarding visual
37 impact to protected areas along the John Day River) is needed.

Conclusions of Law

1 For the reasons discussed above, the Council concludes that the BCWF would comply
2 with the Council's Protected Areas Standard if Amendment #2 were approved.

(d) Scenic and Aesthetic Values

3 **OAR 345-022-0080**

4 *(1) Except for facilities described in section (2), to issue a site certificate, the*
5 *Council must find that the design, construction, operation and retirement of the*
6 *facility, taking into account mitigation, are not likely to result in significant*
7 *adverse impact to scenic and aesthetic values identified as significant or important*
8 *in applicable federal land management plans or in local land use plans in the*
9 *analysis area described in the project order.*

10 * * *

Findings of Fact

11 In the Final Order on the Application, the Council described the visual features of the
12 proposed BCWF. Approval of Amendment #2 would allow construction of access road
13 segments outside the previously approved site boundary. The amendment would have no
14 effect on the number of turbines or the size of turbines already authorized under the site
15 certificate. Under the proposed amendment, there would be no significant change in
16 circumstances or underlying facts that would affect the Council's previous finding that the
17 design, construction, operation and retirement of the facility, taking into account mitigation,
18 are not likely to result in significant adverse impact to scenic and aesthetic values identified as
19 significant or important in applicable federal land management plans or in local land use plans
20 in the analysis area.

Conclusions of Law

21 For the reasons discussed above, the Council concludes that the BCWF would comply
22 with the Council's Scenic and Aesthetic Values Standard if Amendment #2 were approved.

(e) Recreation

23 **OAR 345-022-0100**

24 *(1) Except for facilities described in section (2), to issue a site certificate, the*
25 *Council must find that the design, construction and operation of a facility, taking*
26 *into account mitigation, are not likely to result in a significant adverse impact to*
27 *important recreational opportunities in the analysis area as described in the*
28 *project order. The Council shall consider the following factors in judging the*
29 *importance of a recreational opportunity:*

30 *(a) Any special designation or management of the location;*

31 *(b) The degree of demand;*

32 *(c) Outstanding or unusual qualities;*

33 *(d) Availability or rareness;*

1 (e) Irreplaceability or irretrievability of the opportunity.

2 * * *

Findings of Fact

3 In the Final Order on the Application, the Council found that recreational
4 opportunities associated with the John Day River, the Journey Through Time Scenic Byway
5 and historic trail alignments are important recreational opportunities within the analysis area.
6 The Council found that the design, construction, operation and retirement of the proposed
7 BCWF facilities would not result in significant adverse impact to these recreational
8 opportunities, taking into account the mitigation that is required under site certificate
9 conditions. The changes that would be allowed under Amendment #2 would not affect the
10 facts upon which the Council relied in making these findings. The Council finds that there has
11 been no change of facts or circumstances that would affect the Council's earlier findings
12 regarding the impacts of the BCWF on recreational opportunities.

Conclusions of Law

13 For the reasons discussed above, the Council concludes that the BCWF would comply
14 with the Council's Recreation Standard if Amendment #2 were approved.

(f) Public Health and Safety Standards for Wind Energy Facilities

15 **OAR 345-024-0010**

16 * * *

17 (2) *To issue a site certificate for a proposed wind energy facility, the Council must*
18 *find that the applicant:*

19 (a) *Can design, construct and operate the facility to exclude members of the public*
20 *from close proximity to the turbine blades and electrical equipment;*

21 (b) *Can design, construct and operate the facility to preclude structural failure of*
22 *the tower or blades that could endanger the public safety and to have adequate*
23 *safety devices and testing procedures designed to warn of impending failure and to*
24 *minimize the consequences of such failure.*

Findings of Fact

25 In the Final Order on the Application, the Council found that the certificate holder
26 could design, construct and operate the proposed BCWF facilities to exclude members of the
27 public from close proximity to the turbine blades and electrical equipment, to preclude
28 structural failure of the tower or blades that could endanger the public safety and to have
29 adequate safety devices and testing procedures. To ensure public safety, the Council included
30 conditions 37, 38, 39, 40, 41, 42, 43, 44, 45, 46 and 47 in the site certificate.

31 The changes that would be allowed under Amendment #2 would not involve any
32 change in the design, size or location of facility components allowed under the site certificate
33 or any change in the conditions relating to public safety. The Council finds that there has been
34 no change of facts or circumstances that would affect the Council's earlier findings regarding
35 public health and safety at the BCWF site.

Conclusions of Law

1 For the reasons discussed above, the Council concludes that the BCWF would comply
2 with the Council's Public Health and Safety Standards for Wind Energy Facilities if
3 Amendment #2 were approved.

(g) Siting Standards for Wind Energy Facilities

4 **OAR 345-024-0015**

5 *To issue a site certificate for a proposed wind energy facility, the Council must*
6 *find that the applicant:*

7 *(1) Can design and construct the facility to reduce visual impact by methods*
8 *including, but not limited to:*

9 *(a) Not using the facility for placement of advertising, except that advertising does*
10 *not include the manufacturer's label or signs required by law;*

11 *(b) Using the minimum lighting necessary for safety and security purposes and*
12 *using techniques to prevent casting glare from the site, except as otherwise*
13 *required by the Federal Aviation Administration or the Oregon Department of*
14 *Transportation, Transportation Development Branch, Aeronautics Section; and*

15 *(c) Using only those signs necessary for facility operation and safety and signs*
16 *required by law;*

17 *(2) Can design and construct the facility to restrict public access by the following*
18 *methods:*

19 *(a) For a horizontal-axis wind energy facility with tubular towers, using locked*
20 *access sufficient to prevent unauthorized entry to the interior of the tower;*

21 *(b) For a horizontal-axis wind energy facility with lattice-type towers:*

22 *(A) Removal of wind facility tower climbing fixtures to 12 feet from the*
23 *ground;*

24 *(B) Installation of a locking, anti-climb device on the wind facility tower; or*

25 *(C) Installation of a protective fence at least 6 feet high with a locking gate; or*

26 *(c) For a vertical-axis wind energy facility, installation of a protective fence at*
27 *least 6 feet high with a locking gate;*

28 *(3) Can design and construct facility to reduce cumulative adverse environmental*
29 *impacts in the vicinity to the extent practicable by measures including, but not*
30 *limited to, the following, where applicable:*

31 *(a) Using existing roads to provide access to the facility site, or if new roads are*
32 *needed, minimizing the amount of land used for new roads and locating them to*
33 *reduce adverse environmental impacts;*

34 *(b) Combining transmission lines and points of connection to local distribution*
35 *lines;*

1 (c) Connecting the facility to existing substations, or if new substations are
2 needed, minimizing the number of new substations; and

3 (d) Avoiding, to the extent practicable, the creation of artificial habitat for raptors
4 or raptor prey. Artificial habitat may include, but is not limited to:

5 (A) Above-ground portions of foundations surrounded by soil where weeds can
6 accumulate;

7 (B) Electrical equipment boxes on or near the ground that can provide shelter
8 and warmth; and

9 (C) Horizontal perching opportunities on the towers or related structures.

Findings of Fact

10 In the Final Order on the Application, the Council found that the certificate holder
11 could design and construct the BCWF facilities to reduce visual impact, to restrict public
12 access and to reduce cumulative adverse environmental impacts in the vicinity to the extent
13 practicable in accordance with the requirements of OAR 345-024-0015.

14 PGE has requested approval to use its company logo on up to 20 percent of the turbine
15 nacelles.³¹ The logo would be large enough to be clearly visible from the ground. Approval of
16 this request would require a change to Condition 50 of the site certificate. PGE proposed the
17 following change:

18 (50) During construction of the facility, to reduce the visual impact of the facility, the
19 certificate holder shall:

20 (a) Paint turbine towers, nacelles, rotors, meteorological towers, and cabinets
21 containing pad-mounted equipment with a low-reflectivity, neutral gray, white, off-white
22 or earth tone finish to reduce contrast with the surrounding background.

23 (b) Apply a low-reflectivity finish to the exterior of the O&M building and substation
24 equipment to control their visual integration into the surrounding background.

25 (c) With the exception of the facility owner's logo (on up to 20% of the units) and the
26 turbine manufacturer's logo that may appear on turbine nacelles, not allow any
27 advertising to be used on any part of the facility or on any signs posted at the facility.

28 (d) Use only those signs required by law or for facility safety or security, except that
29 the certificate holder may erect a sign near the O&M facility or substation to identify the
30 wind energy facility.

31 Section (1) of the Council's standard requires a finding by the Council that the
32 applicant "can design and construct the facility to reduce visual impact" by the methods listed
33 in the subsections. Subsection (a) requires that the facility not be used for the placement of
34 "advertising," but the rule excludes "the manufacturer's label" from the definition of
35 "advertising." Subsection (c) limits the use of "signs" to those necessary for facility operation
36 and safety and signs required by law.³²

37 The Department's rationale for recommending the restriction on the use of wind
38 turbines for advertising has been that the use of advertising would have an adverse visual
39 effect that would be contrary to the objective of designing the facility to blend with the

³¹ E-mail from Rick Tetzloff, February 1, 2006.

³² Site certificate conditions similar to Condition 50, prohibiting the use of wind turbines for "advertising," are currently in effect in the site certificates for the Klondike III Wind Project and the Stateline Wind Project.

1 surrounding landscape as much as possible. Although the turbines themselves (with or
2 without advertising) have a visual impact that cannot be avoided, some degree of mitigation
3 might be provided by avoiding the use of unnecessary markings that would tend to attract
4 visual attention. PGE is sensitive to this concern and has proposed to put the logo on the
5 nacelles of no more than 20 percent of the turbines. PGE, further, has stated that its logo is
6 “simple in form, consisting of the black capital letters ‘PGE’ surrounded by four colored
7 fleches that create a square diamond enclosure for the letters” and has observed: “In addition,
8 use of simple, understated logos on the nacelles is quite different from allowing advertising,
9 which could entail installing large signs on the site at eye level, or as has been the case in
10 some places, use of the turbine towers as supports for large billboards.”³³

11 The Council finds that the “understated” use of a simple logo, as proposed by PGE,
12 would not significantly conflict with the objective of designing the facility to blend with the
13 surroundings. Nevertheless, the current language of the standard makes no allowance for the
14 use of the certificate holder’s logo. In a currently pending Council rulemaking proceeding, the
15 Department has recommended amendments to OAR 345-024-0015 that would include
16 removing the specific restriction in Section (1)(a). Without deciding whether the use of a logo
17 constitutes “advertising” under the Council standard, the Council revises Condition 50 to
18 allow PGE to use its logo, contingent of the Council adopting amendments to OAR 345-024-
19 0015 that would allow the practice. The proposed change to Condition 50 is discussed below
20 in Revision 16.

21 The Council finds that no changes to the other site certificate conditions related to
22 compliance with OAR 345-024-0015 (Conditions 48, 49, 51 and 52) are needed. The Council
23 finds that the changes requested by PGE in Amendment #2 would not affect the basis for the
24 Council’s previous findings.

Conclusions of Law

25 For the reasons discussed above, the Council concludes that the BCWF would comply
26 with the Council’s Siting Standards for Wind Energy Facilities if Amendment #2 were
27 approved.

(h) Siting Standards for Transmission Lines

OAR 345-024-0090

28 *To issue a site certificate for a facility that includes any high voltage transmission*
29 *line under Council jurisdiction, the Council must find that the applicant:*

30
31 *(1) Can design, construct and operate the proposed transmission line so that*
32 *alternating current electric fields do not exceed 9 kV per meter at one meter above*
33 *the ground surface in areas accessible to the public;*

34 *(2) Can design, construct and operate the proposed transmission line so that*
35 *induced currents resulting from the transmission line and related or supporting*
36 *facilities will be as low as reasonably achievable.*

³³ Memorandum from Thomas Priestley, CH2M HILL, “Proposed Amendment to SC Condition 50, Biglow Canyon Wind Farm,” February 20, 2007.

Findings of Fact

1 In the Final Order on the Application, the Council found that the certificate holder
2 could design, construct and operate the proposed transmission lines in accordance with the
3 standards described in OAR 345-024-0090. Transmission line components of the BCWF
4 included aboveground and underground 34.5-kV collector lines and two alternative 230-kV or
5 500-kV, 3-mile or 7-mile aboveground interconnection transmission lines. Under the
6 proposed amendment, the interconnection lines would be eliminated. The changes that would
7 be allowed if Amendment #2 were approved include an increase in the combined length of
8 collector line segments of approximately 10 miles (from 88.6 miles to 99 miles), but the 15-
9 mile limit on the combined length of aboveground segments would remain. The Council finds
10 that there has been no change of facts or circumstances that would affect the Council's earlier
11 findings regarding compliance of the collector system with the standards in OAR 345-024-
12 0090. The Council finds that no changes to the site certificate conditions related to the
13 standards for transmission lines (Conditions 53 and 54) are needed.

Conclusions of Law

14 For the reasons discussed above, the Council concludes that the BCWF would comply
15 with the Council's Siting Standards for Transmission Lines if Amendment #2 were approved.

4. Standards to Protect Wildlife

(a) Threatened and Endangered Species

OAR 345-022-0070

To issue a site certificate, the Council, after consultation with appropriate state agencies, must find that:

(1) For plant species that the Oregon Department of Agriculture has listed as threatened or endangered under ORS 564.105(2), the design, construction, operation and retirement of the proposed facility, taking into account mitigation:

(a) Are consistent with the protection and conservation program, if any, that the Oregon Department of Agriculture has adopted under ORS 564.105(3); or

(b) If the Oregon Department of Agriculture has not adopted a protection and conservation program, are not likely to cause a significant reduction in the likelihood of survival or recovery of the species; and

(2) For wildlife species that the Oregon Fish and Wildlife Commission has listed as threatened or endangered under ORS 496.172(2), the design, construction, operation and retirement of the proposed facility, taking into account mitigation, are not likely to cause a significant reduction in the likelihood of survival or recovery of the species.

Findings of Fact

32 Approval of Amendment #2 would allow construction disturbance and placement of
33 collector line segments and access road segments outside the previously-approved site
34 boundary. PGE has conducted on-site surveys for jurisdictional waters, rare plants and
35 "sensitive" wildlife species in those areas where the site boundary would be expanded under

1 the amendment.³⁴ No threatened or endangered plant or wildlife species were found. The rare
2 plant survey was conducted in late November 2006. The report indicates that small areas of
3 suitable habitat for one State-listed endangered plant species (Northern wormwood) occur in
4 the study area and recommends a follow-up survey of the area be conducted in the spring,
5 during the appropriate bloom time for Northern wormwood and Hendersons ricegrass (a
6 federal species of concern and State candidate), to verify the November 2006 findings. PGE
7 has proposed new condition 126, which would require an appropriate on-site rare plant survey
8 before any construction disturbance in the locations where the site boundary would be
9 enlarged by Amendment #2. The Council modifies the condition to require avoidance of
10 impact if any State or federal special status species are found during the spring survey. The
11 modification is discussed in Revision 23.

12 In the Final Order on the Application, the Council found that construction and
13 operation of the BCWF would not likely have an adverse impact on any threatened or
14 endangered plant or wildlife species. The Council finds that no changes to the site certificate
15 conditions related to the protection of threatened or endangered species (Conditions 55
16 through 57) are needed as a result of the proposed amendment. The Council finds that there
17 has been no change of facts or circumstances that would affect the Council's earlier findings
18 that the design, construction, operation and retirement of the proposed facility are not likely to
19 adversely affect any endangered or threatened plant species.

Conclusions of Law

20 For the reasons discussed above, the Council concludes that the BCWF would comply
21 with the Council's Threatened and Endangered Species Standard if Amendment #2 were
22 approved.

(b) Fish and Wildlife Habitat

OAR 345-022-0060

23 *To issue a site certificate, the Council must find that the design, construction,*
24 *operation and retirement of the facility, taking into account mitigation, are*
25 *consistent with the fish and wildlife habitat mitigation goals and standards of OAR*
26 *635-415-0025 in effect as of September 1, 2000.*
27

Findings of Fact

28 In the Final Order on the Application, the Council made findings regarding the
29 estimated potential impact of the BCWF on wildlife habitat resulting from a "worst-case"
30 analysis of habitat within the micro-siting corridors. Under this worst-case analysis, the
31 Council found that the placement of turbines, access roads and other BCWF structures would
32 have a permanent effect on approximately 173 acres of land.³⁵ The Council found that an
33 additional 388 acres would be affected during construction.³⁶ Condition 63 requires the
34 certificate holder to implement a Habitat Mitigation Plan to improve the wildlife habitat
35 quality of other acreage near the facility as mitigation for the permanent impacts of the
36 facility. Condition 62 requires the certificate holder to restore all areas of construction

³⁴ Request for Amendment #2, Attachments 9 and 10.

³⁵ The impact of these structures would be "permanent" for the life of the facility until completion of site restoration.

³⁶ Table 10, Final Order on the Application, p. 99.

1 disturbance according to the methods, monitoring procedures and success criteria described in
 2 a Revegetation Plan. In addition to the direct “footprint” impacts, the Council recognizes that
 3 the wind facilities might have an indirect adverse impact on avian and bat species. To
 4 evaluate these indirect effects and provide for additional mitigation based on survey data, the
 5 Council included Condition 61, which requires implementation of a Wildlife Monitoring and
 6 Mitigation Plan for the BCWF. In the Final Order on the Application, the Council found that
 7 the BCWF would comply with the Habitat Standard, taking into consideration the mitigation
 8 required under the plans described above and under other conditions of the site certificate.

9 The Request for Amendment #2 describes changes to the facility that would increase
 10 the total area of permanent and construction impact on habitat. Table 5 shows the revised area
 11 of permanent and temporary impacts if Amendment #2 were approved. The areas shown in
 12 this table were estimated assuming a worst-case placement of turbines.³⁷

Table 5: Maximum Area of Affected Higher-Value Habitat (Worst-Case)

Habitat type	Area of construction impact (acres)	Area of permanent impact (acres)
Category 3		
CRP	14.87	8.24
Shrub-steppe	0.69	0.17
Category 4		
CRP	3.19	2.82
Shrub-steppe	0.32	0.10
Grassland	0.70	0.60
Category 6		
Developed	5.59	1.22
Agricultural	391.03	165.32
TOTAL	416.39	178.47

13 The changes that would be allowed under Amendment #2 would increase the facility’s
 14 permanent impact on higher-value habitat (Category 3 and 4) by less than one acre (0.7 acres)
 15 and would increase the facility’s permanent impact on Category 6 habitat by approximately
 16 4.9 acres. The area of higher-value habitat affected during construction would increase by
 17 approximately 0.7 acres, and the area of Category 6 habitat affected during construction
 18 would increase by approximately 28 acres. The Council revises the Habitat Mitigation Plan,
 19 as requested by PGE, to reflect the change in the area of permanent impact that would occur if
 20 Amendment #2 were approved. The changes to the plan are incorporated in Revision 18.

21 In the request for Amendment #2, PGE requests the option to use its own qualified
 22 employees, rather than independent experts, to monitor nest sites for sensitive species during
 23 construction, to perform some of the wildlife and habitat monitoring and mitigation activities
 24 required under the site certificate, to conduct revegetation monitoring and to conduct
 25 monitoring of habitat enhancement in the habitat mitigation area. In particular, PGE requests
 26 changes to the following conditions in site certificate:

³⁷ Table 5 is based on PGE’s revised calculation of habitat impacts (e-mail from Rick Tetzloff, March 1, 2007).

- 1 • Condition 60 requires the certificate holder to hire and direct a qualified
2 independent third-party biological monitor, as approved by the Department, to
3 monitor active nest sites for Swainson’s hawks, ferruginous hawks and burrowing
4 owls during the sensitive period for signs of disturbance and to notify the
5 Department of any non-compliance with the requirements of Condition 60. PGE
6 seeks Council approval to use its own qualified employees to perform the nest
7 monitoring.
- 8 • Condition 61 requires the certificate holder to conduct wildlife monitoring and
9 mitigation in accordance with the Wildlife Monitoring and Mitigation Plan
10 (WMMP). Under the WMMP, the certificate holder must hire a qualified,
11 independent, third-party biological monitor, as approved by the Department, to
12 conduct all components of the plan except the Wildlife Incident Response and
13 Handling System (WIRHS). The WMMP requires an independent, third-party
14 biologist to collect “incidental finds” under the WIRHS. PGE seeks Council
15 approval to use its own qualified employees to conduct the raptor nest survey
16 component of the WMMP and to collect incidental finds under the WIRHS
17 component. PGE does not request a change in the requirement to use qualified,
18 independent third-party biologists to conduct the fatality monitoring program or
19 the avian use and behavior survey components of the plan.
- 20 • Condition 62 requires the certificate holder to restore areas that are disturbed
21 during construction in accordance with the methods, monitoring procedures and
22 success criteria set forth in the Revegetation Plan. Under the plan, the certificate
23 holder must hire and direct a qualified independent third-party botanist or
24 revegetation specialist, as approved by the Department, to conduct monitoring of
25 seeded grassland, shrub-steppe and CRP areas. PGE seeks Council approval to use
26 its own qualified employees to perform the revegetation monitoring.
- 27 • Condition 63 requires the certificate holder to improve the habitat quality in the
28 habitat mitigation area in accordance with the Habitat Mitigation Plan (HMP). The
29 HMP requires the certificate holder to hire and direct a qualified independent
30 third-party biological monitor, as approved by the Department, to perform
31 monitoring of habitat mitigation progress. PGE seeks Council approval to use its
32 own qualified employees to perform monitoring of the habitat mitigation area.

33 In the amendment request, PGE notes that PGE staff have conducted survey and
34 monitoring efforts required by Council for both the Boardman Power Plant and the Port
35 Westward Generating Project. Further, PGE currently employs four full-time wildlife
36 biologists who are responsible for implementing other wildlife and terrestrial resource
37 programs for the company. These biologists staff PGE’s Environmental Services Department,
38 which is a department within the company’s organizational structure that is separate from
39 management and staff responsible for siting and operating generating facilities. This structural
40 separation helps to ensure the integrity of the work performed by the company’s in-house
41 wildlife biologists. PGE’s biologists have extensive experience in new power plant and
42 transmission line siting, hydroelectric project relicensing, ecological monitoring, wildlife
43 research and monitoring, power plant decommissioning and invasive plant management. They
44 have worked closely with ODFW and USFWS biologists.

1 In the amendment request, PGE provided the following summaries of the professional
2 experience of the company's current staff biologists (quoted verbatim):

- 3 • Greg Concannon, Environmental Supervisor and Senior Wildlife Biologist. Greg
4 oversees wildlife and terrestrial resource programs throughout the Company and
5 supervises a team of fish and wildlife biologists and technicians stationed at the
6 Pelton Round Butte Hydroelectric Project. Prior to joining PGE's Environmental
7 Services in 1993, Greg was employed as a biologist for 20 years with the ODFW
8 where he was involved in numerous fish and wildlife research and management
9 programs. Greg has extensive experience in program planning, wildlife surveys
10 and monitoring, including breeding bird/raptor/and bat surveys, research, data
11 analysis and reporting, plant and wildlife protection, and habitat mitigation.
- 12 • Steven Bullock, Fish and Wildlife Biologist. Steve has worked in the
13 environmental field since 1970. Prior to joining PGE in 1977, Steve was in the
14 Peace Corps, worked on fish and wildlife projects for various consultants and the
15 Army Corps of Engineers. While at PGE, he has worked on wildlife and other
16 environmental programs associated with the Trojan Nuclear, Boardman , Coyote
17 Springs, Beaver, and Port Westward generating projects. Steve has extensive
18 experience in wildlife surveys and monitoring, including breeding bird and raptor
19 surveys and studies, data analysis, and reporting.
- 20 • Robert Marheine, Wildlife Biologist/Team Leader. Robert has 17 years experience
21 in the field of natural resources. Prior to joining PGE in the late 1990s, Robert held
22 various positions with ODFW, the Bureau of Land Management and Forest
23 Service. He has worked primarily in the areas of range management, wildlife
24 surveys and monitoring, including breeding bird/raptor/and bat surveys, wildlife
25 habitat improvement, ecosystem restoration, and exotic/invasive vegetation
26 management. Robert is currently involved with long-term implementation of the
27 Terrestrial Resources Management Plan for the Pelton Round Butte Hydroelectric
28 Project, implementation of the Multi-species Candidate Conservation Agreement
29 with Assurances on Boardman Power Plant Lands, and wildlife
30 monitoring/revegetation/exotic-invasive plant management activities associated with
31 decommissioning of the Bull Run Hydroelectric Project.
- 32 • Andrew Bidwell, Wildlife Biologist. Andrew joined PGE's Environmental
33 Services in 2001 and has experience in wildlife sciences and water quality,
34 hazardous waste, and oil spill regulatory compliance. He is experienced in wildlife
35 surveys and monitoring, habitat improvement, exotic/invasive plant management,
36 and avian electrocution issues. Andrew has been the primary biologist responsible
37 for conducting intensive bald eagle monitoring studies during construction of the
38 Port Westward Generating Project, as required by the USFWS Biological Opinion
39 for the Project. Besides providing assistance with wildlife programs throughout the
40 Company, Andrew is also developing a company-wide avian protection plan for
41 PGE's electrical facilities.

42 The Department approves the qualifications of these four individuals. Based on the
43 experience demonstrated by PGE, the Council approves PGE's request to use its own
44 qualified staff biologists. The Council adopts language to require that PGE first obtain

1 Department approval before using biologists other than the four individuals listed in this order
2 to perform the work described in the site certificate in Conditions 60, 61, 62 and 63. In
3 addition, the Council finds that the Council's approval of the use of in-house biologists for
4 this work applies to PGE only and not to any transferee of the site certificate unless
5 specifically approved by the Council as to that transferee. The changes to the site certificate
6 and to the WMMP, Revegetation Plan and HMP are discussed in Revisions 17 and 18.

7 With the changes described above, the Council finds that the BCWF would be
8 consistent with the fish and wildlife habitat mitigation goals and standards of OAR 635-415-
9 0025 under the proposed amendment.

Conclusions of Law

10 The Council concludes, subject to the revisions of Conditions 60, 61, 62 and 63 and
11 related plans, that the BCWF would comply with the Council's Fish and Wildlife Habitat
12 Standard if Amendment #2 were approved.

5. Standards Not Applicable to Site Certificate Eligibility

13 Under ORS 469.501(4), the Council may issue a site certificate without making the
14 findings required by the standards discussed in this section (Structural Standard, Historic,
15 Cultural and Archaeological Resources Standard, Public Services Standard and Waste
16 Minimization Standard).³⁸ Nevertheless, the Council may impose site certificate conditions
17 based on the requirements of these standards.

(a) Structural Standard

OAR 345-022-0020

19 *(1) Except for facilities described in sections (2) and (3), to issue a site certificate,*
20 *the Council must find that:*

21 *(a) The applicant, through appropriate site-specific study, has adequately*
22 *characterized the site as to seismic zone and expected ground motion and ground*
23 *failure, taking into account amplification, during the maximum credible and*
24 *maximum probable seismic events; and*

25 *(b) The applicant can design, engineer, and construct the facility to avoid dangers*
26 *to human safety presented by seismic hazards affecting the site that are expected to*
27 *result from all maximum probable seismic events. As used in this rule "seismic*
28 *hazard" includes ground shaking, landslide, liquefaction, lateral spreading,*
29 *tsunami inundation, fault displacement, and subsidence;*

30 *(c) The applicant, through appropriate site-specific study, has adequately*
31 *characterized the potential geological and soils hazards of the site and its vicinity*

³⁸ This statute provides that the Council may not impose certain standards "to approve or deny an application for an energy facility producing power from wind." ORS 469.300 defines an "application" as "a request for approval of a particular site or sites for the construction and operation of an energy facility or the construction and operation of an additional energy facility upon a site for which a certificate has already been issued, filed in accordance with the procedures established pursuant to ORS 469.300 to 469.563, 469.590 to 469.619, 469.930 and 469.992." Although ORS 469.501(4) does not explicitly refer to a request for a site certificate amendment, we assume that the Legislature intended it to apply.

1 *that could, in the absence of a seismic event, adversely affect, or be aggravated by,*
2 *the construction and operation of the proposed facility; and*

3 *(d) The applicant can design, engineer and construct the facility to avoid dangers*
4 *to human safety presented by the hazards identified in subsection (c).*

5 *(2) The Council may issue a site certificate for a facility that would produce power*
6 *from wind, solar or geothermal energy without making the findings described in*
7 *section (1). However, the Council may apply the requirements of section (1) to*
8 *impose conditions on a site certificate issued for such a facility.*

9 * * *

10 Proposed Conditions

11 In the Final Order on the Application, the Council made findings regarding the site-
12 specific characterization of seismic, geologic and soil hazards for the BCWF. Condition 66
13 requires the certificate holder to conduct appropriate site-specific geotechnical investigation
14 before construction. The certificate holder must consult with, and report geotechnical
15 investigation findings to, the Oregon Department of Geology & Mineral Industries. Condition
16 67 requires the certificate holder to design and construct the facility in accordance with
17 requirements set forth by the State of Oregon's Building Code Division and any other
18 applicable codes and design procedures. In addition, Council rules include mandatory
19 conditions regarding geotechnical investigation and protection of the public from seismic
20 hazards (Conditions 112, 113 and 114). PGE does not propose changes to the conditions
21 related to the structural standard. The Council finds that there has been no change of facts or
22 circumstances that would affect the Council's earlier findings. The Council finds that no new
23 or amended site certificate conditions are needed under the proposed amendment.

(b) Historic, Cultural and Archaeological Resources

24 **OAR 345-022-0090**

25 *(1) Except for facilities described in sections (2) and (3), to issue a site certificate,*
26 *the Council must find that the construction, operation and retirement of the*
27 *facility, taking into account mitigation, are not likely to result in significant*
28 *adverse impacts to:*

29 *(a) Historic, cultural or archaeological resources that have been listed on, or*
30 *would likely be listed on the National Register of Historic Places;*

31 *(b) For a facility on private land, archaeological objects, as defined in ORS*
32 *358.905(1)(a), or archaeological sites, as defined in ORS 358.905(1)(c); and*

33 *(c) For a facility on public land, archaeological sites, as defined in ORS*
34 *358.905(1)(c).*

35 *(2) The Council may issue a site certificate for a facility that would produce power*
36 *from wind, solar or geothermal energy without making the findings described in*
37 *section (1). However, the Council may apply the requirements of section (1) to*
38 *impose conditions on a site certificate issued for such a facility.*

39 * * *

Proposed Conditions

1 In the Final Order on the Application, the Council made findings regarding historic,
2 cultural and archaeological resources in the area based on review of a Cultural Resources
3 Survey Report prepared by CH2M HILL for the applicant, on comments from the
4 Confederated Tribes of the Warm Springs Reservation and on public comments. The Council
5 adopted Condition 69 (requires pre-construction map of disturbance areas, survey of any
6 disturbance areas not previously studied and avoidance of any significant resources found),
7 Condition 70 (requires construction personnel to be trained in the identification of
8 archaeological or cultural materials), Condition 71 (requires construction monitoring by a
9 qualified on-site archaeologist or alternate monitoring procedure), Condition 72 (requires that
10 earth-disturbing activities be halted if archeological objects are discovered in the course of
11 construction of the facility, in accordance with ORS 97.745 and 358.920) and Condition 73
12 (requires that construction of the BCWF proceed carefully in the vicinity of the mapped
13 alignment of the Oregon Trail and that any intact physical evidence of the trail discovered
14 during construction be protected from disturbance).

15 Archaeological Investigations Northwest, Inc (AINW) conducted a pre-construction
16 on-site survey of areas not previously surveyed and prepared a supplemental report and
17 technical memorandum. PGE, appropriately, has submitted the AINW report and
18 memorandum to the Department as confidential because they may contain information
19 entitled to protection under ORS 192.501 and ORS 192.502. The report identified one
20 historic-period site. PGE will avoid the site by re-aligning proposed project features
21 (Condition 69). The Council revises Condition 69 to include reference to the AINW
22 supplemental report and technical memorandum, as requested by PGE and as discussed in
23 Revision 19.

(c) Public Services

OAR 345-022-0110

24 *(1) Except for facilities described in sections (2) and (3), to issue a site certificate,*
25 *the Council must find that the construction and operation of the facility, taking*
26 *into account mitigation, are not likely to result in significant adverse impact to the*
27 *ability of public and private providers within the analysis area described in the*
28 *project order to provide: sewers and sewage treatment, water, storm water*
29 *drainage, solid waste management, housing, traffic safety, police and fire*
30 *protection, health care and schools.*

31
32 *(2) The Council may issue a site certificate for a facility that would produce power*
33 *from wind, solar or geothermal energy without making the findings described in*
34 *section (1). However, the Council may apply the requirements of section (1) to*
35 *impose conditions on a site certificate issued for such a facility.*

36 * * *

Proposed Conditions

37 In the Final Order on the Application, the Council discussed the public service impacts
38 of construction and operation of the BCWF regarding sewage, storm water, solid waste, water
39 supply, housing, police and fire protection, health care, schools and traffic safety. The Council
40 adopted Conditions 74, 75 and 76 to address the source of water for the BCWF during

1 construction and operation and to ensure that water use would have no significant adverse
2 impact on municipal water systems or other wells that serve local landowners. The Council
3 adopted Conditions 77, 78 and 79 to ensure road and highway safety during construction.
4 PGE does not propose changes to the conditions related to the public services standard. The
5 Council finds that there has been no change of facts or circumstances that would affect the
6 Council's earlier findings. The Council finds that no new or amended site certificate
7 conditions are needed under the proposed amendment.

(d) Waste Minimization

8 **OAR 345-022-0120**

9 *(1) Except for facilities described in sections (2) and (3), to issue a site certificate,*
10 *the Council must find that, to the extent reasonably practicable:*

11 *(a) The applicant's solid waste and wastewater plans are likely to minimize*
12 *generation of solid waste and wastewater in the construction, operation, and*
13 *retirement of the facility, and when solid waste or wastewater is generated, to*
14 *result in recycling and reuse of such wastes;*

15 *(b) The applicant's plans to manage the accumulation, storage, disposal and*
16 *transportation of waste generated by the construction and operation of the facility*
17 *are likely to result in minimal adverse impact on surrounding and adjacent areas.*

18 *(2) The Council may issue a site certificate for a facility that would produce power*
19 *from wind, solar or geothermal energy without making the findings described in*
20 *section (1). However, the Council may apply the requirements of section (1) to*
21 *impose conditions on a site certificate issued for such a facility.*

22 * * *

Proposed Conditions

23 In the Final Order on the Application, the Council discussed the applicant's plans for
24 waste minimization. The Council adopted Conditions 80 and 81, which address proper
25 handling of hazardous materials and response to spills and accidental releases of hazardous
26 materials. The Council adopted Conditions 82, 83 and 86, which address the disposal of
27 industrial and sanitary wastewater during construction and operation. The Council adopted
28 Conditions 84, 85 and 87, which address solid waste management on the site during
29 construction and operation.

30 The Council adopted Condition 88, which requires a "Wastewater General Permit
31 #1700" for blade-washing activities. The Department recommended that Condition 88 be
32 revised. Information received from the Oregon Department of Environmental Quality (DEQ),
33 indicates that a #1700-B Wash Water Permit would not be needed for blade-washing,
34 provided there would be no runoff of washwater from the site or discharges to surface waters,
35 storm sewers or dry wells and provided that no acids, bases or metal brighteners would be
36 used with the wash water. DEQ recommends cleaning only with cold water. Biodegradable,
37 phosphate-free cleaners are allowed, but all chemicals, soaps or detergents should be used
38 sparingly. The Council adopts the Department's proposed changes to Condition 88 as
39 discussed in Revision 20.

V. OTHER APPLICABLE REGULATORY REQUIREMENTS: FINDINGS AND CONCLUSIONS

1. Requirements under Council Jurisdiction

1 Under ORS 469.503(3) and under the Council’s General Standard of Review (OAR
2 345-022-0000, the Council must determine that a facility complies with “all other Oregon
3 statutes and administrative rules identified in the project order, as amended, as applicable to
4 the issuance of a site certificate for the proposed facility.” Other Oregon statutes and
5 administrative rules that are applicable to the changes requested in Amendment #2 include the
6 DEQ noise control regulations, the regulations adopted by the Department of State Lands
7 (DSL) for removal or fill of material affecting waters of the state, the Water Resources
8 Department’s (WRD) regulations for appropriating ground water and the Council’s statutory
9 authority to consider protection of public health and safety.

(a) Noise Control Regulations

10 The applicable noise control regulations are as follows:

11 **OAR 340-035-0035**
12 **Noise Control Regulations for Industry and Commerce**

13 *(1) Standards and Regulations:*

14 * * *

15 *(b) New Noise Sources:*

16 * * *

17 *(B) New Sources Located on Previously Unused Site:*

18 *(i) No person owning or controlling a new industrial or commercial noise source*
19 *located on a previously unused industrial or commercial site shall cause or permit*
20 *the operation of that noise source if the noise levels generated or indirectly caused*
21 *by that noise source increase the ambient statistical noise levels, L10 or L50, by*
22 *more than 10 dBA in any one hour, or exceed the levels specified in Table 8, as*
23 *measured at an appropriate measurement point, as specified in subsection (3)(b)*
24 *of this rule, except as specified in subparagraph (1)(b)(B)(iii).*

25 *(ii) The ambient statistical noise level of a new industrial or commercial noise*
26 *source on a previously unused industrial or commercial site shall include all*
27 *noises generated or indirectly caused by or attributable to that source including*
28 *all of its related activities. Sources exempted from the requirements of section (1)*
29 *of this rule, which are identified in subsections (5)(b) - (f), (j), and (k) of this rule,*
30 *shall not be excluded from this ambient measurement.*

31 *(iii) For noise levels generated or caused by a wind energy facility:*

32 *(I) The increase in ambient statistical noise levels is based on an assumed*
33 *background L50 ambient noise level of 26 dBA or the actual ambient background*
34 *level. The person owning the wind energy facility may conduct measurements to*
35 *determine the actual ambient L10 and L50 background level.*

1 (ii) The "actual ambient background level" is the measured noise level at the
2 appropriate measurement point as specified in subsection (3)(b) of this rule using
3 generally accepted noise engineering measurement practices. Background noise
4 measurements shall be obtained at the appropriate measurement point,
5 synchronized with windspeed measurements of hub height conditions at the
6 nearest wind turbine location. "Actual ambient background level" does not include
7 noise generated or caused by the wind energy facility.

8 (iii) The noise levels from a wind energy facility may increase the ambient
9 statistical noise levels L10 and L50 by more than 10 dBA (but not above the limits
10 specified in Table 8), if the person who owns the noise sensitive property executes
11 a legally effective easement or real covenant that benefits the property on which
12 the wind energy facility is located. The easement or covenant must authorize the
13 wind energy facility to increase the ambient statistical noise levels, L10 or L50 on
14 the sensitive property by more than 10 dBA at the appropriate measurement point.

15 (iv) For purposes of determining whether a proposed wind energy facility
16 would satisfy the ambient noise standard where a landowner has not waived the
17 standard, noise levels at the appropriate measurement point are predicted
18 assuming that all of the proposed wind facility's turbines are operating between
19 cut-in speed and the wind speed corresponding to the maximum sound power level
20 established by IEC 61400-11 (version 2002-12). These predictions must be
21 compared to the highest of either the assumed ambient noise level of 26 dBA or to
22 the actual ambient background L10 and L50 noise level, if measured. The facility
23 complies with the noise ambient background standard if this comparison shows
24 that the increase in noise is not more than 10 dBA over this entire range of wind
25 speeds.

26 (v) For purposes of determining whether an operating wind energy facility
27 complies with the ambient noise standard where a landowner has not waived the
28 standard, noise levels at the appropriate measurement point are measured when
29 the facility's nearest wind turbine is operating over the entire range of wind speeds
30 between cut-in speed and the windspeed corresponding to the maximum sound
31 power level and no turbine that could contribute to the noise level is disabled. The
32 facility complies with the noise ambient background standard if the increase in
33 noise over either the assumed ambient noise level of 26 dBA or to the actual
34 ambient background L10 and L50 noise level, if measured, is not more than 10
35 dBA over this entire range of wind speeds.

36 (vi) For purposes of determining whether a proposed wind energy facility
37 would satisfy the Table 8 standards, noise levels at the appropriate measurement
38 point are predicted by using the turbine's maximum sound power level following
39 procedures established by IEC 61400-11 (version 2002-12), and assuming that all
40 of the proposed wind facility's turbines are operating at the maximum sound
41 power level.

42 (vii) For purposes of determining whether an operating wind energy facility
43 satisfies the Table 8 standards, noise generated by the energy facility is measured
44 at the appropriate measurement point when the facility's nearest wind turbine is

1 *operating at the windspeed corresponding to the maximum sound power level and*
2 *no turbine that could contribute to the noise level is disabled.*

3 * * *

4 Findings of Fact

5 In the Final Order on the Application, the Council found that the BCWF is subject to
6 the noise control requirements of OAR 340-035-0035(1)(b)(B). Because of uncertainty about
7 the type of turbine that would be used at the BCWF, the applicant based its noise analysis on
8 data for the GE 1.5-MW turbines. Because data was not yet available for the GE 3.0-MW
9 turbines, the applicant estimated the sound power level of those turbines by adding 2 dBA to
10 the levels associated with the GE 1.5-MW turbines, and then the applicant added 2 dBA to the
11 maximum sound power level for both turbines to provide a conservative estimate. The noise
12 analysis addressed 25 noise sensitive properties potentially affected by noise from the
13 facility.³⁹ The results of the noise analysis showed that the 10-dBA ambient degradation limit
14 would be exceeded at 23 of the identified noise sensitive properties. At two of the identified
15 properties, the 50-dBA maximum allowable limit would be exceeded.⁴⁰

16 To ensure compliance with the noise control regulations, the Council adopted
17 Condition 90. Under the condition, the certificate holder, before beginning construction using
18 GE 1.5-MW or 3.0-MW turbines, must identify the final design locations of all turbines to be
19 built and perform a noise analysis demonstrating that the 50-dBA maximum allowable limit
20 would not be exceeded at any of the 25 identified noise sensitive properties. Further, the
21 condition requires that the certificate holder obtain a “legally effective easement or real
22 covenant” (waiver) from the owners of properties where the pre-construction noise analysis
23 showed the hourly L₅₀ noise levels caused by the facility would exceed 36 dBA (the ambient
24 degradation limit). In addition, Condition 90 requires the certificate holder to design the
25 facility to avoid exceeding the ambient degradation limit at any property for which a waiver is
26 not obtained.

27 Condition 90 applies if GE 1.5-MW or 3.0-MW turbines are used for any phase of the
28 BCWF. For other turbine types that the certificate holder selects for use in the BCWF, the
29 Council adopted Condition 91, which requires a pre-construction noise analysis based on the
30 maximum sound power output of those turbine types.

31 PGE requests a change to Condition 90 to exclude the property identified as “R14”
32 from the list of 25 identified noise sensitive properties. PGE has provided information
33 showing that R14 contains no permanent residential structures. There are two travel trailers
34 located on the property, as well as two outbuildings (barn and storage shed). PGE states that
35 the travel trailers are used periodically by the landowner and are moved occasionally. The
36 barn and storage shed are used for agricultural purposes and do not contain facilities for
37 sleeping. PGE, therefore, does not believe that the property should be considered a “noise
38 sensitive property.”

³⁹ The 25 properties are listed in Table 12 of the Final Order on the Application. The properties are further identified by Revised Figure X1 and by the document “Biglow Noise Sensitive Receptor List-sm.xls,” which were submitted by PGE (e-mail from Rick Tetzloff, January 11, 2007).

⁴⁰ Details of the modeling analysis methods and assumptions are discussed in the Final Order on the Application, p. 131.

1 The DEQ rules define “noise sensitive property” as “real property normally used for
2 sleeping, or normally used as schools, churches, hospitals or public libraries.” OAR 340-035-
3 0015(38). The definition further states: “Property used in industrial or agricultural activities is
4 not Noise Sensitive Property unless it meets the above criteria in more than an incidental
5 manner.” The Department recommends that the Council use a two-pronged inquiry to
6 determine whether the property in question is “normally used for sleeping.” The first prong is
7 to determine whether the property is properly zoned for a use that normally and properly
8 includes sleeping, and the second prong is to determine whether sleeping normally takes place
9 on the property.

10 PGE analyzed the first prong of the analysis by citing Sherman County Zoning
11 Ordinance (SCZO) Section 4.5, which prohibits residential use of “recreational vehicles”
12 except under very limited circumstances.⁴¹

13 *Recreational vehicles may not be occupied for residential purposes or other*
14 *purposes on any lot in the County except as follows:*

- 15 1. *As permitted as a Temporary Residence by Section 4.4.*
- 16 2. *In an approved Recreational Vehicle Park or in an approved Mobile or*
17 *Manufactured Home Park on spaces specifically approved for RV Vehicle use.*
- 18 3. *As a temporary residence by guests of the owner for a period not to exceed 7-*
19 *days out of any 30-day period, particularly during major local events such as*
20 *rodeos, fairs, races, school and community events, adult and youth athletic events,*
21 *and similar events.”*

22 SCZO Section 4.4 allows use of a recreational vehicle as a “temporary residence” in
23 conjunction with construction of an approved permanent home or placement of an approved
24 manufactured home. It requires electric, sewer and water connections be made to the
25 temporary residence. The two “travel trailers” on property R14 are not being used as
26 temporary residences as allowed under this ordinance. The property is not “an approved
27 Recreational Vehicle Park or a Mobile or Manufactured Home Park,” and the circumstances
28 described in paragraph 3 of the ordinance do not apply. For these reasons, the Council
29 concludes that the local zoning ordinance does not allow residential use of the travel trailers
30 on property R14.

31 PGE states that the travel trailers are “used periodically by the landowners.” Such
32 periodic use might include sleeping. The outbuildings on the property, according to PGE, are
33 used for agricultural purposes and do not contain facilities for sleeping. The Council finds that
34 periodic use of the travel trailers on property R14 does not demonstrate that sleeping normally
35 takes place on the property.

36 Based on these findings under the two-pronged analysis described above, the Council
37 finds that R14 does not qualify as a “noise sensitive property” for purposes of compliance
38 with OAR 340-035-0035(1)(b)(B) because the property is not “normally used for sleeping.”
39 The Council approves a change to Condition 90 as requested by PGE and as discussed below
40 in Revision 21.

41 In addition to the proposed change to Condition 90, PGE asks for a change in
42 Condition 91. Condition 91 requires a pre-construction noise analysis for turbines proposed to

⁴¹ The travel trailers fall within the definition of “recreational vehicle” in SCZO section 1.4(108).

1 be built as part of the BCWF other than GE 1.5-MW or GE 3.0-MW turbines. PGE proposes a
2 change the condition that would limit the analysis to the effects of the facility on the noise
3 sensitive properties that were identified during the review of the site certificate application
4 (except for property R14, for the reasons discussed above). Under OAR 345-027-0070(9), the
5 Council applies state statutes and administrative rules in effect on the date the Council makes
6 its decision on an amendment. Compliance with the noise regulations, therefore, must be
7 determined by the Council at the time of decision on Amendment #2 and must consider all
8 existing noise sensitive properties at that time. Accordingly, the Council cannot approve
9 PGE's request to limit Condition 91 to properties identified in the site certificate application.

10 Although the Department has no information about any new noise sensitive properties
11 at this time, it is possible for a new noise sensitive property to be developed and built after the
12 Council's decision on Amendment #2. OAR 340-035-0035 (6)(b) provides for an exception
13 from the noise regulations for "industrial or commercial facilities previously established in
14 areas of new development of noise sensitive property." Under OAR 345-035-0010, any such
15 exception may be authorized by DEQ upon written request by the owner of the noise source,
16 but under OAR 345-035-0110, DEQ has "suspended administration of the noise program,
17 including but not limited to processing requests for exceptions."

18 During the review of the Request for Amendment #2, PGE submitted a letter to the
19 Department requesting that the Council "pursuant to its authority under OAR 345-022-
20 0000(1)(b), determine that the Biglow Canyon Wind Farm qualifies for an exception to the
21 standards of OAR 340-035-0035(1) as to any new development of noise-sensitive property,
22 including residences."⁴² In the letter, PGE analyzed the standards for approval of an exception
23 as set forth in OAR 345-035-0010(2). Those standards require consideration of "the
24 protection of health, safety and welfare of Oregon citizens as well as the feasibility and cost of
25 noise abatement; the past, present and future patterns of land use; the relative timing of land
26 use changes; and other legal constraints." Based on the analysis provided by PGE, the Council
27 makes the following findings in support of the request for an exception under OAR 340-035-
28 0035 (6)(b):

29 **Public Health, Safety and Welfare**

30 The Council's siting and site certificate amendment processes include an analysis of
31 potential noise impacts to those noise sensitive properties in existence at the time of the
32 Council's decision. The Council's procedures for issuance of site certificates and
33 amendment of site certificates are public processes with many opportunities for public
34 notice and comment. Through these processes, the potential locations of wind turbines and
35 substations (which are potential noise sources) are made known to the public. The site
36 certificate restricts the certificate holder to construction of facility components within the
37 boundaries of the approved areas. The siting process involves notice to surrounding
38 landowners of the potential presence of new noise sources. If a facility is built in phases,
39 the actual presence of wind turbines is further notice to landowners and purchasers of the
40 potential noise impact. Any property owner who intends to develop a new noise sensitive
41 use, such as a personal residence, should consider the actual or potential presence of
42 facility components and any potential adverse health, safety or welfare impacts from the
43 noise they produce.

⁴² Letter from Rick Tetzloff, February 22, 2007.

1 **Feasibility and Cost of Noise Abatement**

2 Unlike the many new industrial or commercial noise sources that can be enclosed in a
3 building, wind turbines cannot be enclosed or surrounded by walls, landscaping or other
4 methods of noise abatement. The certificate holder can, to some extent, reduce the noise
5 from substation transformers using such methods, but substation noise generally
6 contributes very little to the overall noise impacts of the facility. For wind turbines, there
7 are only two feasible means of noise abatement: (1) turbine design, and (2) turbine
8 location. The Council's siting process, by requiring a rigorous analysis of potential noise
9 impacts, encourages certificate holders to select turbines that are designed to reduce the
10 generation of noise and to locate turbines away from existing noise sensitive properties.
11 There is no opportunity for the applicant or the Council to locate turbines to abate noise
12 impacts at noise sensitive properties that do not yet exist. After a turbine has been built as
13 part of a string of turbines and other facility components, it is not feasible to relocate the
14 turbine to accommodate a newly developed noise sensitive property that was built in spite
15 of notice of the presence of the wind facility. In addition, the best use of the wind resource
16 for generation of electricity limits the feasible and cost-effective alternatives for location
17 of the wind turbine generators.

18 **Past, Present and Future Patterns of Land Use**

19 The site of the BCWF is zoned for exclusive farm use. The EFU zoning significantly
20 limits the potential for development of new noise sensitive uses on lands near the facility.
21 The local zoning ordinance limits development of new dwellings (SCZO Sections 3.1.2
22 and 3.1.3) and requires an 80-acre minimum lot size for new farm parcels (Section
23 3.1.4(a)). These restrictions make the future development of new noise sensitive uses
24 unlikely.

25 **Relative Timing of Land Use Changes**

26 The Council's siting and site certificate amendment processes provide advance notice to
27 landowners of the potential construction of wind turbines. The Department and PGE have
28 no information that would indicate significant future changes in land use in the area,
29 including any planned development of new noise sensitive properties.

30 **Legal Constraints**

31 PGE has contractual relationships with many property owners in the BCWF project area,
32 including leaseholds or easements for development of the project, but PGE cannot forbid
33 construction of new noise sensitive uses by other property owners with whom PGE has no
34 contractual relationship. Further, the site certificate restricts the location of wind turbines
35 and substations.

36 Based on these findings, the Council approves an exception under OAR 340-035-
37 0035(6)(b) for the BCWF (as approved under Amendment #2) from compliance with the
38 noise control regulations with respect to any development of noise sensitive property after the
39 date of this site certificate amendment. The exception is addressed by the changes to
40 Condition 91 as discussed in Revision 22.

41 The changes to facility components requested under Amendment #2 do not include the
42 addition of any new noise sources. Noise from the turbines and substation transformers has
43 been taken into account under the Council's previous findings. The Council finds that

1 operation of the facility would comply with OAR 340-035-0035(1)(b)(B), subject to the
2 Department's recommended revisions to Conditions 90 and 91.

Conclusions of Law

3 Based on the findings above, the Council finds that, if Amendment #2 were approved,
4 the BCWF would comply with the applicable noise control regulations in OAR 340-035-
5 0035, subject to amendment of Conditions 90 and 91 as discussed herein.

(b) Removal-Fill Law

6 The Oregon Removal-Fill Law (ORS 196.800 through .990) and DSL regulations
7 (OAR 141-085-0005 through 141-085-0090) require a Removal/Fill Permit if 50 cubic yards
8 or more of material is removed, filled or altered within any "waters of the state" at the
9 proposed site.⁴³

Findings of Fact

10 In the Final Order on the Application, the Council concluded that a Removal/Fill
11 Permit was not needed. One State-jurisdictional water (an intermittent stream) and one
12 wetland were identified within the project are, but the applicant made a commitment to avoid
13 impact to these resources.⁴⁴

14 Under the proposed amendment, PGE would avoid impact to the State-jurisdictional
15 stream, because the interconnection transmission line (which was shown as crossing the
16 stream in one location) would no longer be part of the BCWF facility. The identified wetland
17 lies along Emigrant Springs Lane near a residence. PGE proposes to build a collector line
18 across or near the wetland but would avoid impact to the wetland.⁴⁵ It is unclear from the
19 record whether DSL assessed this wetland area to determine its jurisdictional status.

20 The changes requested by Amendment #2 include additions to the area included
21 within the site boundary. PGE conducted a survey for potential federal or State-jurisdictional
22 waters within the new areas. The survey identified an additional potential State-jurisdictional
23 intermittent stream.⁴⁶ If Amendment #2 were approved, a new collector line segment would
24 cross this stream.

25 PGE proposes new Condition 127 that would require the certificate holder to avoid
26 any disturbance within the stream channel or within a 25-foot buffer on either side of the
27 stream channel. The Council adopts the proposed new condition but modifies it to include
28 avoidance of the wetland along Emigrant Springs Lane, as discussed in Revision 24.

Conclusions of Law

29 Based on the findings discussed above, the Council concludes that a Removal/Fill
30 Permit would not be needed for the BCWF if Amendment #2 were approved, subject to
31 adoption of proposed Condition 127.

⁴³ OAR 141-085-0010(225) defines "Waters of this State." The term includes wetlands and certain other water bodies.

⁴⁴ The intermittent stream is shown as crossing #7 and the wetland is identified as "POWHX" on Figure J-1 in the site certificate application.

⁴⁵ E-mail from Mike Pappalardo, CH2M HILL, February 14, 2007.

⁴⁶ The stream location is identified as "Crossing G" in Attachment 9 of the Request for Amendment #2.

(c) Ground Water Act

1 Through the provisions of the Ground Water Act of 1955, ORS 537.505 to ORS
2 537.796, and OAR Chapter 690, the Oregon Water Resources Commission administers the
3 rights of appropriation and use of the ground water resources of the state. Under OAR 345-
4 022-0000(1), the Council must determine whether the proposed BCWF complies with these
5 statutes and administrative rules.

Findings of Fact

6 In the Final Order on the Application, the Council found that the certificate holder
7 could obtain sufficient water during construction (approximately 12 million gallons) and that
8 no new water right would be needed. The Council found that less than 5,000 gallons per day
9 would be used during facility operation for domestic purposes and blade-washing. This water
10 would come from a new on-site well. No new water right would be needed for this use. The
11 Council adopted Conditions 74, 75 and 76, which address the sources of water during
12 construction and operation, and Condition 88, which requires the certificate holder to
13 demonstrate to the Department that blade-washing would be authorized under a DEQ general
14 permit #1700.

15 The changes that would be allowed under Amendment #2 would not require any
16 alteration in the proposed water uses or water sources. The amendment would not increase the
17 quantity of water needed during construction or operation. We have discussed the use of water
18 for blade-washing and the revision of Condition 88 above at page 42.

Conclusions of Law

19 Based on the findings discussed above, the Council concludes that the BCWF would
20 comply with applicable regulations pertaining to water rights if Amendment #2 were
21 approved, subject to revision of Condition 88.

(d) Public Health and Safety

22 Under ORS 469.310, the Council is charged with ensuring that the “siting,
23 construction and operation of energy facilities shall be accomplished in a manner consistent
24 with protection of the public health and safety....” State law further provides that “the site
25 certificate shall contain conditions for the protection of the public health and safety....” ORS
26 469.401(2).

Findings of Fact

27 In the Final Order on the Application, the Council made findings and adopted
28 conditions regarding public safety addressing fire protection (Conditions 92 through 98),
29 magnetic field effects from transmission lines (Condition 99) and coordination with the
30 Oregon Public Utility Commission (Condition 100). The changes that would be allowed if
31 Amendment #2 were approved would not change any of the Council’s previous findings,
32 except that the facility would not include a 230-kV or 500-kV transmission line. The proposed
33 amendment would not affect the certificate holder’s ability to comply with the public safety
34 conditions in the site certificate. The Department did not recommend any changes to the
35 public safety conditions.

Conclusions of Law

1 Based on the findings discussed above, the Council concludes that the BCWF would
2 comply with requirements to protect public health and safety if Amendment #2 were approved
3 and that no amendment of the conditions related to public safety are needed.

2. Requirements That Are Not Under Council Jurisdiction

(a) Federally-Delegated Programs

4 Under ORS 469.503(3), the Council does not have jurisdiction for determining
5 compliance with statutes and rules for which the federal government has delegated the
6 decision on compliance to a state agency other than the Council. Nevertheless, the Council
7 may rely on the determinations of compliance and the conditions in the federally-delegated
8 permits issued by these state agencies in deciding whether the proposed facility meets other
9 standards and requirements under its jurisdiction. As required under Condition 26, the
10 certificate holder would conduct all construction work in compliance with an Erosion and
11 Sediment Control Plan satisfactory to the Oregon Department of Environmental Quality and
12 as required under the federally-delegated National Pollutant Discharge Elimination System
13 Storm Water Discharge General Permit #1200-C. The requirements of the 1200-C permit
14 would apply to the entire facility as described under the amended site certificate.

(b) Requirements That Do Not Relate to Siting

15 Under ORS 469.401(4), the Council does not have authority to preempt the
16 jurisdiction of any state agency or local government over matters that are not included in and
17 governed by the site certificate or amended site certificate. Such matters include
18 design-specific construction or operating standards and practices that do not relate to siting.
19 Nevertheless, the Council may rely on the determinations of compliance and the conditions in
20 the permits issued by these state agencies and local governments in deciding whether the
21 facility meets other standards and requirements under its jurisdiction.

VI. GENERAL APPLICATION OF CONDITIONS

22 The conditions referenced in this order include conditions that are specifically required
23 by OAR 345-027-0020 (Mandatory Conditions in Site Certificates), OAR 345-027-0023 (Site
24 Specific Conditions), OAR 345-027-0028 (Monitoring Conditions) or OAR Chapter 345,
25 Division 26 (Construction and Operation Rules for Facilities). The conditions referenced in
26 this order include conditions based on representations in the request for amendment and the
27 supporting record. The Council deems these representations to be binding commitments made
28 by the certificate holder. This order also includes conditions that the Council finds necessary
29 to ensure compliance with the siting standards of OAR Chapter 345, Divisions 22 and 24, or
30 to protect public health and safety.

31 In addition to all other conditions referenced or included in this order, the site
32 certificate holder is subject to all conditions and requirements contained in the rules of the
33 Council and in local ordinances and state law in effect on the date the amended site certificate
34 is executed.⁴⁷ Under ORS 469.401(2), upon a clear showing of a significant threat to the

⁴⁷ With regard to land use, the applicable local criteria are those in effect on the date the certificate holder submitted the request for amendment.

1 public health, safety or the environment that requires application of later-adopted laws or
2 rules, the Council may require compliance with such later-adopted laws or rules.

3 The Council recognizes that many specific tasks related to the design, construction,
4 operation and retirement of the facility will be undertaken by the certificate holder's agents or
5 contractors. Nevertheless, the certificate holder is responsible for ensuring that all agents and
6 contractors comply with all provisions of the site certificate.

VII. GENERAL CONCLUSION

7 The proposed amendment would allow the changes to the design and construction of
8 the BCWF as described herein. The Council finds that revisions to Conditions 8, 9, 11, 12, 21,
9 50, 60, 61, 62, 63, 69, 88, 90 and 91 and revisions to the *Wildlife Monitoring and Mitigation*
10 *Plan* (Attachment A), the *Revegetation Plan* (Attachment B) and the *Habitat Mitigation Plan*
11 (Attachment C) are needed for approval of the proposed amendment. The Council finds that
12 Conditions 5, 6 and 7 should be removed and new Conditions 126 and 127 should be added
13 for approval of the proposed amendment.

14 Based on the findings and conclusions discussed above regarding the proposed
15 amendment, the Council makes the following findings:

- 16 1. The proposed Amendment #2 complies with the requirements of the Oregon
17 Energy Facility Siting statutes, ORS 469.300 to ORS 469.570 and 469.590 to
18 469.619.
- 19 2. The proposed Amendment #2 complies with the standards adopted by the Council
20 pursuant to ORS 469.501.
- 21 3. The proposed Amendment #2 complies with all other Oregon statutes and
22 administrative rules applicable to the amendment of the site certificate for the
23 BCWF and within the Council's jurisdiction.

24 Accordingly, the Council finds that the facility complies with the General Standard of
25 Review (OAR 345-022-0000). The Council concludes, based on a preponderance of the
26 evidence on the record, that the site certificate may be amended as requested by the certificate
27 holder, subject to the revisions recommended by the Department and set forth below. The
28 Council adopts the recommended revisions.

1. The Department's Recommended Revisions

29 New text proposed by the Department shown with single underline. New text
30 proposed by PGE with concurrence by the Department is shown with double underline.
31 Deletions are shown with a strikethrough.

Revision 1

32 *Page 1, lines 7-11:*

33 The findings of fact, reasoning and conclusions of law underlying the terms and conditions of
34 this site certificate are set forth in the following documents related to the facility, which are
35 incorporated herein by this reference: (a) the Council's Final Order in the Matter of the
36 Application for a Site Certificate for the Biglow Canyon Wind Farm (the "Final Order on the
37 Application") ~~and~~; (b) the Council's Final Order on Amendment ~~#1-1~~; and (c) the Council's
38 Final Order on Amendment #2. [~~Amendments #1 and #2~~]

1 *Page 1, lines 12-15:*

2 In interpreting this site certificate, any ambiguity shall be clarified by reference to the
3 following, in order of priority: (1) this ~~First~~Second Amended Site Certificate; (2) the Final
4 Order on Amendment #2; (3) the Final Order on Amendment #1; (34) the Final Order on the
5 Application; and (45) the record of the proceedings that led to the Final Orders on the
6 Application, Amendment #1, and Amendment #1-2. [Amendments #1 and #2]

7 *Page 1, lines 27-33:*

8 C. This site certificate does not address, and is not binding with respect to, matters that were
9 not addressed in the Council's Final Orders on the Application, Amendment #1 and
10 Amendment #1-2. These matters include, but are not limited to: building code compliance,
11 wage, hour and other labor regulations, local government fees and charges, and other
12 design or operational issues that do not relate to siting the facility (ORS 469.401(4)) and
13 permits issued under statutes and rules for which the decision on compliance has been
14 delegated by the federal government to a state agency other than the Council. ORS
15 469.503(3). [Amendments #1 and #2]

Explanation

16 This revision includes a reference in the site certificate to the findings of fact,
17 reasoning and conclusions in support of the present amendment. The revision establishes the
18 order of priority in which the underlying documents should be considered in resolving any
19 ambiguity. The revision includes the Final Order on Amendment #2 in the scope of matters
20 addressed in the site certificate. The parenthetical references at the end of the paragraphs
21 follow standard practice and provide a historical reference of when these changes were made
22 to the site certificate.

Revision 2

23 *Page 2, lines 23-30:*

24 ~~In the site certificate application, the certificate holder requested the flexibility, within defined~~
25 ~~500 foot wide turbine corridors, to defer the final selection of turbine vendor, turbine size,~~
26 ~~number of turbines to be installed, and precise turbine layout until after the issuance of a site~~
27 ~~certificate and prior to commencement of construction. In the site certificate application, the~~
28 ~~certificate holder defined the range of possible turbine vendors, sizes and numbers. In the site~~
29 ~~certificate application, the certificate holder also defined two alternative transmission line~~
30 ~~options, two alternative substation locations, and three alternative O&M facility locations.~~
31 ~~Subject to specific conditions, this site certificate grants that flexibility allows the certificate~~
32 ~~holder to construct wind turbines within defined 500-foot wide turbine corridors and to select~~
33 ~~turbine vendor, turbine size, number of turbines to be installed and precise turbine layout~~
34 ~~before beginning construction. This site certificate allows the certificate holder to construct~~
35 ~~other facility components (collector lines, access roads, meteorological towers) within~~
36 ~~micrositing areas. The facility is described further in the Final Order on Amendment #2.~~
37 [Amendment #2]

Explanation

38 The deleted text describes what the applicant requested in the site certificate
39 application. The proposed revision focuses on what is allowed under the site certificate. In
40 addition, the proposed revision allows the certificate holder to construct other facility
41 components within micrositing areas, as discussed in Section III.3.

Revision 3

1 1. Major Structures. The Biglow Canyon Wind Farm will consist of up to 225 wind turbines
2 with an aggregate nominal nameplate generating capacity of up to 337.5450 megawatts
3 (MW) of electricity ~~or 150 wind turbines with an aggregate nominal nameplate generating~~
4 ~~capacity of 450 MW. The~~and an average electric generating capacity ~~will be about 112.5 of~~
5 up to 150 MW. Turbines will be mounted on tubular steel towers ranging in height from
6 265 to 280 feet at the hub with an overall height of from 400 to 445 feet including the
7 turbine blades. The turbines will be erected within up to 30 corridors and spaced to
8 optimize the facility's output. The facility will be located on private farmland that the
9 certificate holder has leased from the affected landowners. [Amendments #1 and #2]

Explanation

10 The revision clarifies the intended flexibility in turbine selection. If the deleted text
11 were retained, the description might be interpreted as allowing only two possible
12 configurations: either 225 turbines each having a peak capacity of 1.5 MW or 150 turbines
13 each having a peak capacity of 3.0 MW. In contrast, specific conditions previously approved
14 by the Council (for example, Conditions 7, 8, 9 and 91) allow the use of turbines "other than
15 GE 1.5-MW or GE 3.0-MW turbines." The revision sets upper limits on both the number of
16 turbines (225) and the combined peak generating capacity (450 MW) allowed under the site
17 certificate. The Department believes that the Council intended the specific conditions to be
18 controlling.

Revision 4

19 *Page 3, lines 3-13:*

20 a. Power Collection System. Each wind turbine will generate power at about 600 volts.
21 The transformer sitting at the base of each wind turbine unit will increase the voltage
22 to 34.5 kilovolts (kV). From the transformer, power will be transmitted to a central
23 substation by means of electric cables. Most of the cables will be buried three feet or
24 more below the surface in trenches about 3 feet wide. In areas where collector cables
25 from several turbine strings follow the same alignment, *e.g.*, on approach to the
26 substation, multiple sets of cables may be installed within a single trench. If the
27 facility is fully developed, there will be about ~~468,000 feet (88.699 miles)~~ of 3-wire
28 collector cables. Generally, these cables will be above, below or adjacent to the fiber
29 optic cables comprising the supervisory control and data acquisition system.
30 [Amendment #2]

Explanation

31 The Department concurs with PGE's proposed change but recommends adding the
32 historical reference.

Revision 5

33 *Page 3, lines 23-37:*

34 b. Substations and Interconnection System. ~~Under one of its transmission alternatives,~~
35 ~~the certificate holder would construct a new substation in the southern section of the~~
36 ~~facility site.~~ The substation site ~~would~~will be a graveled, fenced area of up to 6 acres
37 with transformers, switching equipment and a parking area. Transformers ~~would~~will
38 be non-polychlorinated biphenyl (PCB) oil-filled types. The facility will ~~transmission~~
39 ~~line would be about 3 miles long and would interconnect with the~~ a new Bonneville

1 Power Administration (BPA) system transmission line adjacent to the facility
2 substation, at the existing Klondike Schoolhouse Substation. Under its second
3 transmission alternative, the certificate holder would construct a new substation near
4 the center of the facility site. The substation site would be a graveled, fenced area of
5 up to 6 acres with transformers, switching equipment and a parking area.
6 Transformers would be non-PCB oil-filled types. The transmission line would be
7 about 7 miles long and would interconnect with an electric transformer or switching
8 facility to be installed at BPA's John Day Substation or Switchyard for delivery of
9 electricity to BPA's high voltage transmission system. [Amendment #2]

Explanation

10 The revision describes a single substation with an adjacent interconnection with the
11 BPA system. During the review of the amendment request, PGE confirmed its final selection
12 of the substation site.⁴⁸ The Department recommends that the Council revise the text proposed
13 by PGE in the amendment request to describe a single substation location and the removal of
14 the transmission lines.

Revision 6

15 *Page 3, lines 41-44, and page 4, lines 1-13:*

16 d. Operations and Maintenance Building. The site of the operations and maintenance
17 building will comprise about 5 acres adjacent to the substation on Herin Lane. The
18 O&M building will occupy about 5,000 square feet and will include office and
19 workshop areas, control room, kitchen, bathroom, shower, utility sink, and other
20 typical facilities. Water for the bathroom, shower and kitchen will be obtained from an
21 onsite well constructed by a licensed contractor in accordance with local and state
22 requirements. Water use will not be expected to exceed 1,000 gallons per day.
23 Domestic wastewater generated at the O&M facility will drain into an onsite septic
24 system. A graveled parking area for employees, visitors and equipment will be located
25 adjacent to the O&M facility.

26 ~~The certificate holder proposed three alternative locations for the O&M facility: (1)~~
27 ~~adjacent to the substation to be located in the southern section of the facility site in the~~
28 ~~event Biglow is intereconnected to the BPA transmission system by means of the~~
29 ~~Klondike Schoolhouse Substation; (2) adjacent to the substation to be located near the~~
30 ~~center of the facility site in the event Biglow is intereconnected to the BPA~~
31 ~~transmission system by means of the John Day Substation; or (3) at the site of an~~
32 ~~existing house located at 97327 Emigrant Lane, Wasco, Oregon. [Amendment #2]~~

Explanation

33 The Department recommends that the Council revise the text proposed by PGE in the
34 amendment request to describe a single O&M building location.⁴⁹ During the review of the
35 amendment request, PGE confirmed its final selection of the O&M building site.⁵⁰

⁴⁸ E-mail from Rick Tetzloff, December 29, 2006.

⁴⁹ In the Proposed Order, the Department erroneously referred to "the intersection of Herin Lane and North Klondike Road." These roads do not intersect.

⁵⁰ E-mail from Rick Tetzloff, December 29, 2006.

Revision 7

1 *Page 4, lines 20-25:*

- 2 f. Access Roads. The certificate holder will construct about 40.541.5 miles of new roads
3 to provide access to the wind turbine strings, together with turnaround areas at the end
4 of each wind turbine string. The roads will be about 16 feet wide (possibly up to 28
5 feet wide in some locations) and will be composed of crushed gravel with shoulders
6 (without gravel) about 3 feet wide. In addition, the certificate holder will improve
7 about 0.7 mile of existing roads by providing an all-weather surface and, in some
8 cases, widening the roads to accommodate construction vehicles. [Amendment #2]

Explanation

9 The Department concurs with PGE's proposed change but recommends adding the
10 historical reference.

Revision 8

11 *Page 4, after line 34:*

- 12 h. Temporary Crane Paths. The certificate holder will develop seven temporary crane
13 paths, totaling approximately 5.1 miles, in order to move construction cranes between
14 turbine corridors. The temporary crane paths will be returned to their pre-construction
15 condition following completion of construction of the facility. [Amendment #2]

Explanation

16 The Department concurs with PGE's proposed change but recommends adding the
17 historical reference.

Revision 9

18 *Page 5, lines 25-30:*

- 19 ~~(5) If the certificate holder elects to build the facility in a single phase using only GE 1.5-~~
20 ~~MW turbines, GE 3.0 MW turbines or a combination of these two GE turbines, before~~
21 ~~beginning construction of the facility and after considering all micro-siting factors, the~~
22 ~~certificate holder shall provide to the Department a detailed map of the proposed facility~~
23 ~~showing the final locations where facility components are proposed to be built within the~~
24 ~~500 foot wide corridors shown on Revised Figures C-2 and C-2A of the ASC~~
25 ~~Supplement. [Condition removed by Amendment #2]~~

Explanation

26 The Department concurs with PGE's proposed change but recommends adding the
27 historical reference.

Revision 10

28 *Page 5, lines 31-40, and page 6, lines 1-3:*

- 29 ~~(6) If the certificate holder proposes to build the facility in more than one phase using only~~
30 ~~GE 1.5 MW turbines, GE 3.0 MW turbines or a combination of these two GE turbines,~~
31 ~~before beginning construction of any phase of the facility and after considering all~~
32 ~~micro-siting factors, the certificate holder shall provide to the Department a detailed map~~
33 ~~of that phase of the facility showing the final locations where facility components are~~
34 ~~proposed to be built within the 500 foot wide corridors shown on Revised Figures C-2~~
35 ~~and C-2A of the ASC Supplement, shall identify on this map the facilities that would~~

1 constitute that phase of construction, and shall provide documentation defining the
2 quantities of each of the following components that would constitute that phase of
3 construction: GE 1.5 MW turbines, GE 3.0 MW turbines, pad transformers,
4 meteorological towers, substation, O&M facility, miles of 230 kV or 500 kV
5 transmission line, miles of aboveground 34.5 kV collector system, miles of access road,
6 acres of turnarounds and access road intersections, and acres of temporary laydown area.
7 [Condition removed by Amendment #2]

Explanation

8 Condition 6 would apply “if the certificate holder proposes to build the facility in
9 more than one phase using only GE 1.5-MW turbines, GE 3.0-MW turbines or a combination
10 of these two GE turbines.” PGE is not using either GE 1.5-MW or GE 3.0-MW turbines in the
11 first phase of construction of the BCWF. Accordingly, this condition does not apply and can
12 be removed from the site certificate.

Revision 11

13 *Page 6, lines 4-16:*

14 (7) ~~If the certificate holder elects to build the facility in a single phase using any turbines
15 other than the GE 1.5 MW turbines or GE 3.0 MW turbines, before beginning
16 construction of the facility and after considering all micro-siting factors, the certificate
17 holder shall provide to the Department a detailed map of the proposed facility showing
18 the final locations where facility components are proposed to be built within the 500-
19 foot wide corridors shown on Revised Figures C-2 and C-2A of the ASC Supplement.
20 The certificate holder shall include with this map documentation defining quantities of
21 each of the following components that would constitute the complete facility: turbines,
22 pad transformers, meteorological towers, substation, O&M facility, miles of 230 kV or
23 500 kV transmission line, miles of aboveground 34.5 kV collector system, miles of
24 access road, acres of turnarounds and access road intersections, and acres of temporary
25 laydown area. For each turbine, the certificate shall define the turbine manufacturer,
26 turbine capacity, weight of steel, height of tower, sweep of blade, and size of concrete
27 foundation. [Condition removed by Amendment #2]~~

Explanation

28 The Department concurs with PGE’s proposed change but recommends adding the
29 historical reference.

Revision 12

30 *Page 6, lines 17-30:*

31 (8) If the certificate holder elects to build the facility in more than one phase using any
32 turbines other than the GE 1.5-MW turbines or GE 3.0-MW turbines, before beginning
33 construction of any phase of the facility and after considering all micro-siting factors, the
34 certificate holder shall provide to the Department a detailed map of that phase of the
35 facility showing the final locations where facility components are proposed to be built
36 ~~within the 500 foot wide corridors shown on Revised Figures C-2 and C-2A of the ASC~~
37 Supplement in relation to the features and micro-siting corridors shown on Figure 1a as
38 identified in the Final Order on Amendment #2, shall identify on this map the facilities
39 that would constitute that phase of construction, and shall provide documentation
40 defining the quantities of each of the following components that would constitute that
41 phase of construction: turbines, pad transformers, meteorological towers, substation,

1 O&M facility, miles of 230 kV or 500 kV transmission line, miles of aboveground 34.5-
2 kV collector system, miles of access road, acres of turnarounds and access road
3 intersections, ~~and acres of temporary laydown area~~ and miles of temporary crane paths.
4 For each turbine, the certificate shall define the turbine manufacturer, turbine capacity,
5 weight of steel, height of tower, sweep of blade, and size of concrete foundation.
6 [Amendment #2]

Explanation

7 The Department recommends updating the reference to the figure that identifies the
8 approved micro-siting corridors and other facility features. As described herein, "Figure 1a" is
9 Figure 1a of the amendment request as revised by e-mail from Rick Tetzloff, March 1, 2007,
10 with attachment ("p1r2Figure1a_3-1-07.pdf"). The Department concurs with the other
11 changes requested by PGE but recommends adding the historical reference.

Revision 13

12 *Page 6, lines 31, through page 8, line 4:*

13 (9) ~~If the certificate holder elects to build the facility in a single phase using only GE 1.5-~~
14 ~~MW turbines, GE 3.0 MW turbines or a combination of these two GE turbines, before~~
15 ~~beginning construction of the facility the certificate holder shall submit to the State of~~
16 ~~Oregon through the Council a bond or letter of credit in the amount of \$6.208 million (in~~
17 ~~2005 dollars) naming the State of Oregon, acting by and through the Council as~~
18 ~~beneficiary or payee. If the certificate holder elects to build the facility in a single phase~~
19 ~~using any turbines other than the GE 1.5 MW or GE 3.0 MW turbines or if the~~
20 ~~certificate holder elects to build the facility in more than one phase using any~~
21 ~~combination of turbines, before beginning construction of any phase of the facility, the~~
22 ~~certificate holder shall submit to the State of Oregon through the Council a bond or letter~~
23 ~~of credit naming the State of Oregon, acting by and through the Council, as beneficiary~~
24 ~~or payee in the amount (in 2005 dollars) determined by the Department as the gross cost~~
25 ~~of demolition and site restoration minus the carbon steel scrap value plus the one percent~~
26 ~~performance bond amount, ten percent administration and project management costs and~~
27 ~~twenty percent future developments contingency applicable to the proposed phase of~~
28 ~~construction, together with any previous phases of construction. If the certificate holder~~
29 ~~elects to build the facility in more than one phase using only GE 1.5 MW turbines, GE~~
30 ~~3.0 MW turbines or a combination of the two GE turbines, the Department will establish~~
31 ~~the amount of the bond or letter of credit by applying the unit costs described in Table 5~~
32 ~~of the Council's final order on the site certificate application (incorporated herein by this~~
33 ~~reference) to the number of units identified by the certificate holder and verified by the~~
34 ~~Department as applicable to the proposed phase and any previous phases of construction~~
35 ~~and adding to that subtotal the one percent performance bond amount, ten percent~~
36 ~~administration and project management costs and twenty percent future developments~~
37 ~~contingency. If the certificate holder elects to build the facility using any turbines other~~
38 ~~than the GE 1.5 MW turbines or GE 3.0 MW turbines, for each phase of construction~~
39 ~~the Department will establish the amount of the bond or letter of credit by using its~~
40 ~~Facility Retirement Cost Estimating Guide to estimate the gross cost of demolition and~~
41 ~~site restoration minus the carbon steel scrap value plus the one percent performance~~
42 ~~bond amount, ten percent administration and project management costs and twenty-~~
43 ~~percent future developments contingency. In February 2007, in accordance with the~~
44 ~~terms and conditions of the First Amended Site Certificate, the certificate holder~~
45 ~~submitted to the State of Oregon through the Council a letter of credit in the amount of~~
46 ~~\$1.608 million before beginning construction of Phase 1 of the facility. The calculation~~

1 of the amount of the letter of credit included a deduction from the estimated cost of site
2 restoration for Phase 1 for the estimated value of scrap steel. In the Final Order on
3 Amendment #2, the Council found that there should be no deduction of scrap or salvage
4 value in calculating the amount of financial assurance required for site restoration.

5 Within 60 days following the effective date of the Second Amended Site Certificate, the
6 certificate holder shall submit an amended or replacement letter of credit for Phase 1 in
7 the amount of \$4.73 million (in 2005 dollars), adjusted to present value as of the date of
8 issuance as described in (a).

9 Before beginning construction of any future phase of the facility, the certificate holder
10 shall submit a bond or letter of credit for that phase in an amount approved by the
11 Department and based on the costs shown in Table 3 of the Final Order on Amendment
12 #2.

13 (a) The certificate holder shall adjust the amounts of the bond or letter of credit
14 annually all bonds or letters of credit submitted in compliance with this condition to
15 present value as of the date of issuance, using the following calculation and subject to
16 approval by the Department:

17 (i) Adjust the gross cost (in 2005 dollars) to present value, using the U.S. Gross
18 Domestic Product Implicit Price Deflator, Chain-Weight, as published in the Oregon
19 Department of Administrative Services' Oregon Economic and Revenue Forecast or by
20 any successor agency (the "Index"). If at any time the Index is no longer published, the
21 Council shall select a comparable calculation to adjust 2005 dollars to present value.

22 ~~(ii) Adjust the estimated carbon steel scrap value by an index factor derived from~~
23 ~~the Producer Price Index values, not seasonally adjusted, reported by the U.S.~~
24 ~~Department of Labor, Bureau of Labor Statistics, "Commodities: Metals and Metal~~
25 ~~Products: Carbon Steel Scrap" (Series ID: WPU101211). Using the average monthly~~
26 ~~index value for the 12 months ending with December of the year preceding the year in~~
27 ~~which the adjustment is made as the numerator and the average monthly index value for~~
28 ~~the 12 months ending with December 2005 (277.2) as the denominator, multiply the~~
29 ~~estimated scrap value of \$149 per net ton (in 2005 dollars) by the resulting factor. If at~~
30 ~~any time the Producer Price Index Values are no longer published, the Council shall~~
31 ~~select a comparable calculation to adjust the estimated scrap value.~~

32 ~~—— (iii) Multiply the adjusted carbon steel scrap value (ii) per net ton by the number~~
33 ~~of tons of carbon steel scrap applicable to the phase or phases of construction to which~~
34 ~~the letter of credit applies and subtract the resulting value from the adjusted gross cost~~
35 ~~(i).~~

36 (iv) Add 1 percent of the subtotal (iii) adjusted gross cost for the adjusted
37 performance bond amount, 10 percent of the subtotal (iii) adjusted gross cost for the
38 adjusted administration and project management costs; and 2010 percent of the subtotal
39 (iii) adjusted gross cost for the adjusted future developments contingency.

40 (v) Add the subtotal adjusted gross cost (iii) to the sum of the percentages (iv)
41 and round the resulting total to the nearest \$1,000 to determine the adjusted financial
42 assurance amount for the reporting year.

1 (b) The certificate holder shall annually adjust all bonds or letters of credit submitted
2 in compliance with this condition to present value as of the date of issuance as described
3 in (a).

4 **(bc)** The certificate holder shall use a form of bond or letter of credit approved by the
5 Council.

6 **(ed)** The certificate holder shall use an issuer of the bond or letter of credit approved
7 by the Council.

8 **(de)** The certificate holder shall describe the status of ~~the~~all bonds or letters of credit
9 for the facility in the annual report submitted to the Council under Condition (122).

10 **(ef)** The bond or letter of credit shall not be subject to revocation or reduction before
11 retirement of the facility.

12 [Amendment #2]

Explanation

13 As discussed above (pages 16 through 21), the Council considered whether to continue
14 to allow a deduction for scrap or salvage value when estimating the appropriate amount of
15 financial assurance required under site certificates. Based on Council discussion at the
16 February 2007 meeting, the Department recommended that the Council require the certificate
17 holder to increase the financial assurance amount for Phase 1. The Department further
18 recommended that the Council find that there should be no deduction of scrap or salvage
19 value in calculating the amount of financial assurance required for site restoration for future
20 phases of the BCWF but that the future developments contingency adder be calculated as 10-
21 percent of the gross cost estimate.

Revision 14

22 *Page 8, lines 13-26:*

23 (11) The certificate holder shall begin construction of the facility ~~within three years after the~~
24 ~~effective date of the site certificate~~by June 30, 2009. Under OAR 345-015-0085(9), a
25 site certificate is effective upon execution by the Council Chair and the applicant. The
26 Council may grant an extension of the deadline to begin construction in accordance with
27 OAR 345-027-0030 or any successor rule in effect at the time the request for extension
28 is submitted. [Amendment #2]

29 (12) The certificate holder shall complete construction of the facility ~~within five years after~~
30 ~~the effective date of the site certificate~~by June 30, 2011. Construction is complete when:
31 (1) the facility is substantially complete as defined by the certificate holder's
32 construction contract documents; (2) acceptance testing has been satisfactorily
33 completed; and (3) the energy facility is ready to begin continuous operation consistent
34 with the site certificate. The certificate holder shall promptly notify the Department of
35 the date of completion of construction. The Council may grant an extension of the
36 deadline for completing construction in accordance with OAR 345-027-0030 or any
37 successor rule in effect at the time the request for extension is submitted. [Amendment #2]

Explanation

1 The site certificate became effective June 30, 2006. The Council intended the
2 construction beginning and completion deadlines to run from that date. To avoid possible
3 confusion with the effective dates of subsequent amended site certificates, the Department
4 recommends revisions to Conditions 11 and 12 to specify the deadline dates.

Revision 15

5 *Page 9, lines 13-18:*

6 (21) The certificate holder shall locate access roads and temporary construction laydown and
7 staging areas to minimize disturbance with farming practices and, wherever feasible,
8 shall place turbines and transmission interconnection lines along the margins of
9 cultivated areas to reduce the potential for conflict with farm operations. The certificate
10 holder shall place aboveground ~~transmission and~~ collector lines and junction boxes
11 along property lines and public road rights-of-way to the extent practicable. [Amendment
12 #2]

Explanation

13 Because the 230-kV or 500-kV transmission lines originally included in the facility
14 description would be eliminated under Amendment #2, PGE requested a change to Condition
15 21. Although the Department treats collector lines as a type of transmission line, the
16 Department concurs with PGE's request but recommends adding the historical reference.

Revision 16

17 *Page 12, lines 11-23:*

18 (50) During construction of the facility, to reduce the visual impact of the facility, the
19 certificate holder shall:

20 (a) Paint turbine towers, nacelles, rotors, meteorological towers, and cabinets
21 containing pad-mounted equipment with a low-reflectivity, neutral gray, white, off-white
22 or earth tone finish to reduce contrast with the surrounding background.

23 (b) Apply a low-reflectivity finish to the exterior of the O&M building and substation
24 equipment to control their visual integration into the surrounding background.

25 (c) With the exception of the turbine manufacturer's logo that may appear on turbine
26 nacelles, not allow any advertising to be used on any part of the facility or on any signs
27 posted at the facility. In addition, if the Council amends OAR 345-024-0015 by
28 eliminating the restriction in Section (1)(a) of that rule and not otherwise prohibiting the
29 use of a logo, the certificate holder may place its logo on the nacelles of not more than
30 20 percent of the wind turbines.

31 (d) Use only those signs required by law or for facility safety or security, except that the
32 certificate holder may erect a sign near the O&M facility or substation to identify the
33 wind energy facility.

34 [Amendment #2]

Explanation

35 PGE has proposed the use of a simple, understated logo on not more than 20 percent
36 of the turbine nacelles, as discussed above at page 32. Because this request might conflict
37 with the current Council standard in OAR 345-025-0015, the Department recommends a

1 change to Condition 50 to allow PGE to use its logo in the manner requested, contingent on
2 amendment of the standard.

Revision 17

3 *Page 14, lines 13-29:*

4 In addition, the certificate holder shall flag the boundaries of the 1300-foot buffer area,
5 or such lesser distance as may be approved by the Department in the event there is an
6 adequate physical barrier between the nest site and the construction impacts, and shall
7 instruct construction personnel to avoid any unnecessary activity within the buffer area.
8 The certificate holder shall direct a qualified biologist, ~~independent third-party biological~~
9 ~~monitor~~, as approved by the Department, to observe the active nest sites during the
10 sensitive period for signs of disturbance and to notify the Department of any non-
11 compliance with this condition. The Department has approved the qualifications of the
12 four biologists identified in the Final Order on Amendment #2. The certificate holder
13 may select other qualified biologists to observe the nest sites, subject to Department
14 approval. If the ~~monitor~~ biologist observes nest site abandonment or other adverse impact
15 to nesting activity, the certificate holder shall implement appropriate mitigation, in
16 consultation with ODFW and subject to the approval of the Department, unless the
17 adverse impact is clearly shown to have a cause other than construction activity. The
18 certificate holder may begin or resume high impact construction activities before the
19 ending day of the sensitive period if any known nest site is not occupied by the early
20 release date. If a nest site is occupied, then the certificate holder may begin or resume
21 high-impact construction before the ending day of the sensitive period with the approval
22 of ODFW, after the young are fledged. The certificate holder shall use a protocol
23 approved by ODFW to determine when the young are fledged (the young are
24 independent of the core nest site). [Amendment #2]

Explanation

25 PGE proposed a modification to this paragraph in Condition 60 to allow “a qualified
26 biological monitor” to observe nest sites as required under the condition. The Department
27 recommends that the Council approve PGE’s request to use its own qualified staff biologists
28 or, subject to Department approval, third-party biologists. The Department further
29 recommends that the Council require that PGE first obtain Department approval before using
30 staff biologists other than the four individuals identified herein.

Revision 18

31 *Page 14, line 30, through page 15, line 2:*

- 32 (61) The certificate holder shall conduct wildlife monitoring and mitigation in accordance
33 with the Wildlife Monitoring and Mitigation Plan that is incorporated in the ~~order~~ Final
34 Order on Amendment #2 as Attachment A and as may be amended from time to time.
35 [Amendment #2]
- 36 (62) The certificate holder shall restore areas that are temporarily disturbed during
37 construction in accordance with the methods, monitoring procedures and success criteria
38 set forth in the Revegetation Plan that is incorporated in the ~~order~~ Final Order on
39 Amendment #2 as Attachment B and as may be amended from time to time. [Amendment
40 #2]
- 41 (63) Before beginning construction of the facility, the certificate holder shall acquire the legal
42 right to create, maintain and protect a habitat mitigation area for the life of the facility by

1 means of an outright purchase, conservation easement or similar conveyance and shall
2 provide a copy of the documentation to the Department. Within the habitat mitigation
3 area, the certificate holder shall improve the habitat quality in accordance with the
4 Habitat Mitigation Plan that is incorporated in the ~~order~~ Final Order on Amendment #2
5 as Attachment C and as may be amended from time to time. [Amendment #2]

Explanation

6 The Department recommends that the Council modify Conditions 61, 62 and 63 to
7 specifically identify the order that these conditions reference. It is appropriate to reference the
8 Final Order on Amendment #2 in these conditions, because the Department is also
9 recommending that the Council revise the Wildlife Monitoring and Mitigation Plan, the
10 Revegetation Plan and the Habitat Mitigation Plan as part of Amendment #2. The
11 Department's proposed revisions to the three plans are shown in "mark-up" versions of
12 Attachments A, B and C, which are incorporated in this revision by reference.

Revision 19

13 *Page 15, lines 23-35:*

14 (69) Before beginning construction of any phase of the facility, the certificate holder shall
15 provide to the Department a map showing the final design locations of all components of
16 that phase of the facility and areas that would be temporarily disturbed during
17 construction and also showing the areas surveyed by CH2M Hill and Archaeological
18 Investigations Northwest, Inc. (AINW) in preparing the Cultural Resources Surveys for
19 Biglow Canyon Wind Farm included in the site certificate application as Attachment S-
20 ~~4.1~~ and in Request for Amendment #2 as Attachment 15. The certificate holder shall hire
21 qualified personnel to conduct field investigation of all areas of permanent or temporary
22 disturbance that CH2M Hill and AINW did not previously survey and shall provide to
23 the Department a written report of the field investigation. If any significant historic,
24 cultural or archaeological resources are found during the field investigation, the
25 certificate holder shall ensure that construction and operation of the facility will have no
26 impact on the resources. The certificate holder shall instruct all construction personnel to
27 avoid areas where the resources were found and shall implement other appropriate
28 measures to protect the resources. [Amendment #2]

Explanation

29 The Department concurs with PGE's proposed change but recommends adding the
30 historical reference.

Revision 20

31 *Page 18, lines 29-31:*

32 (88) During operation of the facility, the certificate holder ~~shall~~ may engage in blade-washing
33 activities but shall ensure that these activities do not cause runoff of washwater from the
34 site or discharges to surface waters, storm sewers or dry wells. The certificate holder
35 shall not use acids, bases or metal brighteners with the wash water. The certificate may
36 use biodegradable, phosphate-free cleaners sparingly only in accordance with the
37 appropriate Wastewater General Permit #1700 issued by the Oregon Department of
38 Environmental Quality and all applicable regulations. [Amendment #2]

Explanation

1 Based on information received from DEQ, a Wastewater General Permit #1700 would
2 not be needed if the certificate holder complies with the restrictions described in the proposed
3 revision of Condition 88.

Revision 21

4 *Page 18, line 38, through page 20, line 5:*

5 (90) If the GE 1.5-MW turbines (for which the certificate holder states the maximum sound
6 power level warranted by the manufacturer is 104 dBA) or the GE 3.0-MW turbines
7 (provided the certificate holder is able to demonstrate, by means of the manufacturer's
8 warranty or other means acceptable to the Department, that the maximum sound power
9 level of the GE 3.0-MW turbine is 106 dBA) will be used at the facility, before
10 beginning construction, the certificate holder shall present information demonstrating to
11 the satisfaction of the Department that ~~each of the following requirements have been met~~
12 at the 24 identified noise sensitive properties. The identified noise sensitive properties
13 are the properties listed in Table 12 of the Final Order on the Application and further
14 identified in the Final Order on Amendment #2, except for property R14-ah-25
15 properties identified as noise sensitive properties in the site certificate application:

16 (a) For any identified noise sensitive property ~~listed in Table 12~~ where the previously-
17 predicted maximum hourly L₅₀ noise level caused by the facility would equal or exceed
18 50 dBA, the certificate holder shall identify the final design locations of all turbines to
19 be built and perform a noise analysis demonstrating, in accordance with OAR 340-035-
20 0035(1)(b)(B)(iii)(IV), that the total hourly L₅₀ noise level generated by the facility
21 would not exceed 50 dBA at the appropriate measurement point. The certificate holder
22 shall perform the noise analysis using the noise model, CADNA/A by DataKustik
23 GmbH of Munich, Germany, and shall assume the following input parameters:

- 24 • The maximum sound power level of turbines and substation transformers based
25 on the manufacturers' warranty~~warranted by the manufacturer~~ or confirmed by
26 other means acceptable to the Department
- 27 • The exact locations of the proposed turbines
- 28 • The environmental factors included in the original noise analysis, *i.e.*, the
29 temperature, relative humidity, barrier effects and ground effects used in the
30 original analysis. If the certificate holder has cause to believe the environmental
31 factors included in the original noise analysis are no longer valid for a particular
32 receiver, the certificate holder shall perform the noise analysis for that receiver
33 using both the environmental factors included in the original noise analysis and
34 the environmental factors the certificate holder now believes to be applicable to
35 that receiver.

36 (b) Where the previously-predicted hourly L₅₀ noise levels caused by the facility
37 would exceed 36 dBA but not exceed 50 dBA at any identified noise sensitive property
38 ~~listed in Table 12~~, the certificate holder has obtained a legally effective easement or real
39 covenant pursuant to which the owner of the property authorizes the certificate holder's
40 operation of the facility to increase ambient statistical noise levels L₁₀ and L₅₀ by more
41 than 10 dBA at the appropriate measurement point. A legally effective easement or real
42 covenant shall: (i) include a legal description of the burdened property (the noise
43 sensitive property); (ii) be recorded in the real property records of the county; (iii)
44 expressly benefit the certificate holder; (iv) expressly run with the land and bind all

1 future owners, lessees or holders of any interest in the burdened property; and (v) not be
2 subject to revocation without the certificate holder's written approval.

3 (c) If, for any identified noise sensitive property ~~listed in Table 12~~ where the
4 previously-predicted hourly L₅₀ noise levels caused by the facility would exceed 36 dBA
5 but not exceed 50 dBA, the certificate holder has not obtained a legally effective
6 easement or real covenant as described in (b) above, the certificate holder shall identify
7 the final design locations of all turbines to be built and perform a noise analysis
8 demonstrating, in accordance with OAR 340-035-0035(1)(b)(B)(iii)(IV), that the total
9 noise generated by the facility (including the noise from turbines and substation
10 transformers) would meet the ambient noise degradation test at the appropriate
11 measurement point on those noise sensitive properties. The certificate holder shall
12 perform the noise analysis using the noise model, CADNA/A by DataKustik GmbH of
13 Munich, Germany, and shall assume the following input parameters:

- 14 • The maximum sound power level of turbines and substation transformers based
15 on the manufacturers' warranty ~~warranted by the manufacturer~~ or confirmed by
16 other means acceptable to the Department
- 17 • The exact locations of the proposed turbines
- 18 • The environmental factors included in the original noise analysis, *i.e.*, the
19 temperature, relative humidity, barrier effects and ground effects used in the
20 original analysis. If the certificate holder has cause to believe the environmental
21 factors included in the original noise analysis are no longer valid for a particular
22 receiver, the certificate holder shall perform the noise analysis for that receiver
23 using both the environmental factors included in the original noise analysis and
24 the environmental factors the certificate holder now believes to be applicable to
25 that receiver.

26 [Amendment #2]

Explanation

27 The Department concurs with the substance of the change PGE has requested, but the
28 Department recommends that the Council adopt the changes shown above to more clearly
29 identify the noise sensitive properties to which the condition applies. In addition, the
30 Department recommends that the condition more clearly state that "total noise generated by
31 the facility" includes noise generated by substation transformers.

Revision 22

32 *Page 20, lines 6-29:*

33 (91) ~~If~~ Before beginning construction using turbines other than the GE 1.5-MW turbines (for
34 which the certificate holder states the maximum sound power level warranted by the
35 manufacturer is 104 dBA) or the GE 3.0-MW turbines (for which the certificate holder
36 has assumed a maximum sound power level of 106 dBA) will be used at the facility,
37 before beginning construction of the facility, the certificate holder shall:

38 (a) iIdentify the final design locations of all turbines to be built, perform a ~~complete~~
39 ~~new~~ noise analysis for all turbines and substation transformers, and generate a new table
40 listing each noise sensitive property, as defined in OAR 340-035-0015(38), and the
41 predicted maximum hourly L₅₀ noise level at each noise sensitive property. The
42 certificate holder shall perform the noise analysis using the noise model, CADNA/A by

1 DataKustik GmbH of Munich, Germany, and shall assume the following input
2 parameters:

- 3 • The maximum sound power level of turbines and substation transformers based
4 on the manufacturers' warranty warranted by the manufacturer or confirmed by
5 other means acceptable to the Department
- 6 • The exact locations of the proposed turbines
- 7 • The environmental factors included in the original noise analysis, i.e., the
8 temperature, relative humidity, barrier effects and ground effects used in the
9 original analysis. If the certificate holder has cause to believe the environmental
10 factors included in the original noise analysis are no longer valid for a particular
11 receiver, the certificate holder shall perform the noise analysis for that receiver
12 using both the environmental factors included in the original noise analysis and
13 the environmental factors the certificate holder now believes to be applicable to
14 that receiver.

15 ~~____ (b) After generating the new table identifying noise sensitive properties and the~~
16 ~~predicted maximum hourly L₅₀ noise level at each noise sensitive property, the~~
17 ~~certificate holder shall meet~~ Demonstrate to the satisfaction of the Department that the
18 requirements of paragraphs (a), (b) and (c) of Conditions (90)(a), (90)(b) and (90)(c)
19 have been met for each with respect to the noise sensitive property listed on the new
20 table generated under paragraph (a) of this condition, properties identified in that
21 table except for any new development of noise sensitive property that occurs after the
22 effective date of the Second Amended Site Certificate.

23 [Amendment #2]

24 Explanation

25 The changes to Condition 91 recommended by the Department clarify the intent of the
26 condition by eliminating unnecessary words and by changing the format of the condition. The
27 Department recommends that the condition specify that substation transformer noise be
28 included in the noise analysis in (a). The Department recommends that the condition
29 acknowledge the Council's finding regarding an exception for new development of noise
sensitive property, as discussed herein.

30 Revision 23

31 *Page 27, following line 14:*

32 VI. CONDITIONS RELATING TO AMENDMENT #2

33 (126) Prior to any disturbance in the areas of the site added in the Final Order for
34 Amendment #2, the certificate holder shall deliver to the Department the results of a
35 spring survey of Crossing G, conducted during the appropriate bloom time for Northern
36 wormwood and Henderson's ricegrass. If Northern wormwood or any other protected
37 rare plant species are observed during the spring survey, the certificate holder shall
38 ensure that construction and operation of the facility will have no impact on the rare
plant habitat. [Amendment #2]

39 Explanation

40 PGE proposes adding new Section VI, "Conditions Relating to Amendment #2," to the
site certificate and adding new Condition (126). The proposed new condition reflects the

1 recommendations of a rare plant survey conducted by CH2M HILL and included in the
2 Request for Amendment #2. As discussed at page 34 above, the report recommended a spring
3 survey be conducted in small areas of habitat suitable for Northern wormwood before any
4 ground disturbance in the area. The Department concurs with PGE's request but recommends
5 that the Council include a requirement to avoid impact if any rare plants are found.

Revision 24

6 *Page 27, following proposed Condition 126:*

7 (127) The certificate holder shall avoid any disturbance, including the placement of poles
8 for the collector line, within 25 feet of the stream channel in the area identified as
9 Crossing G in the Request for Amendment #2 and within a wetland area identified as
10 "POWHX" on Figure J-1 of the site certificate application . [Amendment #2]

Explanation

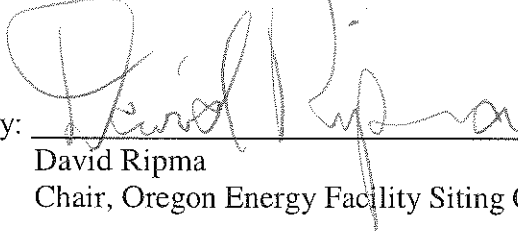
11 The Department concurs with PGE's request but recommends that the Council include
12 a requirement to avoid impact to an additional wetland area that was identified in the site
13 certificate application.

VIII. ORDER

14 The Council approves Amendment #2 and issues an amended site certificate for the
15 Biglow Canyon Wind Farm, subject to the terms and conditions set forth above.

Issued this 10th day of May, 2007.

THE OREGON ENERGY FACILITY SITING COUNCIL

By: 
David Ripma
Chair, Oregon Energy Facility Siting Council

Attachments

Attachment A: Wildlife Monitoring and Mitigation Plan
Attachment B: Revegetation Plan
Attachment C: Habitat Enhancement Plan

Notice of the Right to Appeal

You have the right to appeal this order to the Oregon Supreme Court pursuant to ORS 469.403. To appeal you must file a petition for judicial review with the Supreme Court within 60 days from the day this order was served on you. If this order was personally delivered to you, the date of service is the date you received this order. If this order was mailed to you, the date of service is the date it was mailed, not the day you received it. If you do not file a petition for judicial review within the 60-day time period, you lose your right to appeal.

BIGLOW CANYON WIND FARM: WILDLIFE MONITORING AND MITIGATION PLAN
[MAY 10, 2007]

1 This plan describes wildlife monitoring that the certificate holder shall conduct during
2 operation of the Biglow Canyon Wind Farm (BCWF).¹ The monitoring objectives are to
3 determine whether operation of the facility causes significant fatalities of birds and bats and to
4 determine whether the facility results in a loss of habitat quality. The BCWF facility consists of
5 up to 225 wind turbines with a maximum generating capacity of 450 MW, up to 10 permanent
6 meteorological towers and other related or supporting facilities as described in the site certificate.
7 The BCWF will be built in phases.

8 The certificate holder shall use experienced personnel to manage the monitoring required
9 under this plan and properly trained personnel to conduct the monitoring, subject to approval by
10 the Oregon Department of Energy (Department) as to professional qualifications. For all
11 components of this plan except the Raptor Nesting Surveys and the Wildlife Incident Response
12 and Handling System, the certificate holder shall direct a qualified independent third-party
13 biological monitor, as approved by the Department, to perform monitoring tasks.

14 The Wildlife Monitoring and Mitigation Plan for the BCWF has the following
15 components:

- 16 1) Fatality Monitoring Program including:
 - 17 a) Removal Trials
 - 18 b) Searcher Efficiency Trials
 - 19 c) Fatality Monitoring Search Protocol
 - 20 d) Statistical Analysis
- 21 2) Raptor Nesting Surveys
- 22 3) Avian Use and Behavior Surveys
- 23 4) Wildlife Incident Response and Handling System

24 Following is a discussion of the components of the monitoring plan, statistical analysis
25 methods for fatality data, data reporting and potential mitigation.

26 The selection of the mitigation actions that the certificate holder may be required to
27 implement under this plan should allow for flexibility in creating appropriate responses to
28 monitoring results that cannot be known in advance. If the Department determines that
29 mitigation is needed, the certificate holder shall propose appropriate mitigation actions to the
30 Department and shall carry out mitigation actions approved by the Department, subject to review
31 by the Oregon Energy Facility Council (Council).

¹ This plan is incorporated by reference in the site certificate for the BCWF and must be understood in that context. It is not a "stand-alone" document. This plan does not contain all mitigation required of the certificate holder.

BIGLOW CANYON WIND FARM: WILDLIFE MONITORING AND MITIGATION PLAN
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1. Fatality Monitoring

(a) Definitions and Methods

Seasons

This plan uses the following dates for defining seasons:

Season	Dates
Spring Migration	March 16 to May 15
Summer/Breeding	May 16 to August 15
Fall Migration	August 16 to October 31
Winter	November 1 to March 15

Search Plots

The certificate holder shall conduct fatality monitoring within search plots. The certificate holder, in consultation with the Oregon Department of Fish and Wildlife (ODFW), shall select search plots based on the following sampling scheme, consistent with the sample size requirements for that phase of the facility, as outlined below: On each of the nine turbine strings that extend toward the John Day River, the certificate holder shall include in search plots the two turbines closest to the river for each phase in which these turbines are built. In addition, the certificate holder shall include, for each phase, representative turbines distributed throughout the site, consistent with the sample size described below. Each search plot will contain one turbine. Search plots will be square or circular. Circular search plots will be centered on the turbine location and will have a radius equal to the maximum blade tip height of the turbine contained within the plot. "Maximum blade tip height" is the turbine hub-height plus one-half the rotor diameter. Square search plots will be of sufficient size to contain a circular search plot as described above.

The certificate holder shall provide maps of the search plots to the Department and ODFW before beginning fatality monitoring at the facility. The certificate holder will use the same search plots for each search conducted during each monitoring year. During the second monitoring year, the same end-of-row turbines nearest the John Day River will be sampled, but the other search plots will be selected from the turbines not sampled during the first monitoring year.

Sample Size

The sample size for fatality monitoring is the number of turbines searched per monitoring year. The facility will be built in phases. For the first phase of development (in which 76 turbines will be built), the certificate holder shall conduct fatality monitoring during the first two monitoring years in search plots that include 50 turbines.

The sample size for future phases of the facility, if they are built, will include search plots for a minimum of 40 percent of the wind turbines in that phase but not fewer than 50 turbines, unless the entire phase is fewer than 50 turbines, in which event all turbines will be sampled. The sample size might be larger if, under Section 1(g) of this plan, mitigation is required based on the results of fatality monitoring of the first phase.

BIGLOW CANYON WIND FARM: WILDLIFE MONITORING AND MITIGATION PLAN
[MAY 10, 2007]

1 If no mitigation is required under Section 1(g) of this plan based on the results of fatality
2 monitoring of the first phase, then the sample size for monitoring future phases of the facility
3 may be reduced appropriately if the Department concurs.

4 If mitigation is required under Section 1(g) of this plan based on the results of fatality
5 monitoring of the first phase, then the certificate holder shall propose an appropriate sample size
6 for monitoring the next phase of the facility. The need for, and scope of, fatality monitoring for
7 subsequent phases are subject to the approval of the Department.

8 Scheduling and Sampling Frequency

9 Fatality monitoring will begin upon the commencement of commercial operation of the
10 facility. Fatality monitoring for each subsequent phase will begin upon commercial operation of
11 that phase.

12 For each phase, the first fatality monitoring year will commence on the first day of the
13 month following the commercial operation date of that phase of the facility and will conclude
14 twelve months later (for example, if commercial operation begins in October of 2007, the
15 monitoring year will commence on November 1, 2007, and conclude on October 31, 2008).
16 Subsequent monitoring years of that phase will follow the same schedule (for example, the
17 second monitoring year would begin November 1, 2008) unless the second fatality-monitoring
18 year is postponed with the concurrence of the Department.

19 In each monitoring year, the certificate holder shall conduct fatality-monitoring searches
20 at the rates of frequency shown below. Over the course of one monitoring year, the certificate
21 holder would conduct 16 searches², as follows:

Season	Frequency
Spring Migration	2 searches per month (4 searches)
Summer/Breeding	1 search per month (3 searches)
Fall Migration	2 searches per month (5 searches)
Winter	1 search per month (4 searches)

22 Duration of Fatality Monitoring

23 Fatality monitoring of the first phase of the facility will be complete after two monitoring
24 years, except as follows: A worst-case analysis will be used to resolve any uncertainty in the
25 results of the two years of monitoring data for purposes of determining the mitigation
26 requirements for the facility. If the first two years of monitoring data indicate the potential for
27 unexpected impacts of a type that cannot be resolved appropriately by worst-case analysis and
28 appropriate mitigation, additional, targeted monitoring may be conducted for the first phase of
29 the facility for up to an additional two years before determining the mitigation requirements for
30 the facility, or, alternatively, sample sizes larger than those outlined above will be used in
31 monitoring of subsequent phases of development of the facility.

32 Meteorological Towers

33 The facility will most likely use non-guyed meteorological towers. Non-guyed towers are
34 known to cause little if any bird and bat mortality. Therefore, monitoring will not occur at non-

² Fewer than 16 searches may be conducted if searches are not possible due to safety reasons or severe weather.

BIGLOW CANYON WIND FARM: WILDLIFE MONITORING AND MITIGATION PLAN
[MAY 10, 2007]

1 guyed meteorological towers. If the meteorological towers are guyed, the certificate holder shall
2 search all towers on the same monitoring schedule as fatality monitoring. The certificate holder
3 will use circular search plots. The radius of the circular search plots will extend a minimum of 5
4 meters beyond the most distant guy wire anchor point.

5 (b) Removal Trials

6 The objective of the removal trials is to estimate the length of time avian and bat
7 carcasses remain in the search area. Carcass removal studies will be conducted during each
8 season in the vicinity of the search plots. Estimates of carcass removal rates will be used to
9 adjust carcass counts for removal bias. "Carcass removal" is the disappearance of a carcass from
10 the search area due to predation, scavenging or other means such as farming activity. Removal
11 rates will be estimated by size class, habitat and season.

12 During the first phase, the certificate holder shall conduct carcass removal trials within
13 each of the seasons defined above during the years in which fatality monitoring occurs. During
14 the first year in which fatality monitoring occurs, trials will occur in at least eight different
15 calendar weeks in a year, with at least one calendar week between starting dates. Trials will be
16 spread throughout the year to incorporate the effects of varying weather, farming practices and
17 scavenger densities. At least two trials will be started in each season. Each trial will use at least
18 20 carcasses. For each trial, at least 5 small bird carcasses and at least 5 large bird carcasses will
19 be distributed in cultivated agriculture habitat and at least 3 small bird carcasses and at least 3
20 large bird carcasses will be distributed in non-cultivated habitat (grassland/shrub-steppe and
21 CRP). In a year, about 100 carcasses will be placed in cultivated agriculture and about 60 in non-
22 cultivated grassland/shrub-steppe and CRP for a total of about 160 trial carcasses. The number of
23 removal trials may be reduced to one per season (80 trial carcasses) during the second year of
24 fatality monitoring, subject to approval by the Department, if the certificate holder can
25 demonstrate that the calculation of fatality rates will continue to have statistical validity with the
26 reduced sample size.

27 The need for, and scope of, removal trials for subsequent phases may be modified based
28 on the variability of results of removal trials for the first phase, subject to the approval of the
29 Department.

30 The "small bird" size class will use carcasses of house sparrows, starlings, commercially
31 available game bird chicks or legally obtained native birds to simulate passerines. The "large
32 bird" size class will use carcasses of raptors provided by agencies, commercially available adult
33 game birds or cryptically colored chickens to simulate raptors, game birds and waterfowl. If
34 fresh bat carcasses are available, they may also be used.

35 To avoid confusion with turbine-related fatalities, planted carcasses will not be placed in
36 fatality monitoring search plots. Planted carcasses will be placed in the vicinity of search plots
37 but not so near as to attract scavengers to the search plots. The planted carcasses will be located
38 randomly within the carcass removal trial plots.

39 Carcasses will be placed in a variety of postures to simulate a range of conditions. For
40 example, birds will be: 1) placed in an exposed posture (e.g., thrown over the shoulder), 2)
41 hidden to simulate a crippled bird (e.g., placed beneath a shrub or tuft of grass) and, 3) partially
42 hidden. Trial carcasses will be marked discreetly for recognition by searchers and other
43 personnel. Trial carcasses will be left at the location until the end of the carcass removal trial.

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1 It is expected that carcasses will be checked as follows, although actual intervals may
2 vary. Carcasses will be checked for a period of 40 days to determine removal rates. They will be
3 checked about every day for the first 4 days, and then on day 7, day 10, day 14, day 20, day 30
4 and day 40. This schedule may vary depending on weather and coordination with the other
5 survey work. At the end of the 40-day period, the trial carcasses and scattered feathers will be
6 removed.

7 (c) Searcher Efficiency Trials

8 The objective of searcher efficiency trials is to estimate the percentage of bird and bat
9 fatalities that searchers are able to find. The certificate holder shall conduct searcher efficiency
10 trials on the fatality monitoring search plots in both grassland/shrub-steppe and cultivated
11 agriculture habitat types. Searcher efficiency will be estimated by size class, habitat type and
12 season. Estimates of searcher efficiency will be used to adjust carcass counts for detection bias.

13 During the first phase, searcher efficiency trials will be conducted in each season as
14 defined above, during the years in which the fatality monitoring occurs. Trials will be spread
15 throughout the year to incorporate the effects of varying weather, farming practices and
16 scavenger densities. At least two trials will be conducted in each season. Each trial will use about
17 20 carcasses, although the number will be variable so that the searcher will not know the total
18 number of trial carcasses being used in any trial. For each trial, both small bird and large bird
19 carcasses will be used in about equal numbers. "Small bird" and "large bird" size classes and
20 carcass selection are as described above for the removal trials. A greater proportion of the trial
21 carcasses will be distributed in cultivated agriculture habitat than in non-cultivated habitat
22 (grassland/shrub steppe and CRP). In a year, about 100 carcasses will be placed in cultivated
23 agriculture and about 60 in non-cultivated grassland/shrub steppe and CRP for a total of about
24 160 trial carcasses. The number of searcher efficiency trials may be reduced to one per season
25 (80 trial carcasses) during the second year of fatality monitoring, subject to approval by the
26 Department, if the certificate holder can demonstrate that the calculation of fatality rates will
27 continue to have statistical validity with the reduced sample size.

28 The need for, and scope of, searcher efficiency trials for subsequent phases may be
29 modified based on the variability of results of searcher efficiency trials for the first phase, subject
30 to the approval of the Department.

31 Personnel conducting searches will not know in advance when trials are conducted; nor
32 will they know the location of the trial carcasses. If suitable trial carcasses are available, trials
33 during the fall season will include several small brown birds to simulate bat carcasses. Legally
34 obtained bat carcasses will be used if available.

35 On the day of a standardized fatality monitoring search (described below) but before the
36 beginning of the search, efficiency trial carcasses will be placed at random locations within areas
37 to be searched. If scavengers appear attracted by placement of carcasses, the carcasses will be
38 distributed before dawn.

39 Searcher efficiency trials will be spread over the entire season to incorporate effects of
40 varying weather and vegetation growth. Carcasses will be placed in a variety of postures to
41 simulate a range of conditions. For example, birds will be: 1) placed in an exposed posture
42 (thrown over the shoulder), 2) hidden to simulate a crippled bird and 3) partially hidden.

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1 Each non-domestic carcass will be discreetly marked so that it can be identified as an
2 efficiency trial carcass after it is found. The number and location of the efficiency trial carcasses
3 found during the carcass search will be recorded. The number of efficiency trial carcasses
4 available for detection during each trial will be determined immediately after the trial by the
5 person responsible for distributing the carcasses.

6 If new searchers are brought into the search team, additional detection trials will be
7 conducted to ensure that detection rates incorporate searcher differences.

8 (d) Coordination with the Klondike III Wind Project

9 The proposed Klondike III Wind Project lies to the south of the BCWF on similar terrain
10 and habitat. The Council has approved site certificates for both facilities and requires similar
11 wildlife monitoring. Subject to the approval of both certificate holders and the Department, the
12 number of trials at each site and the number of trial carcasses used at each site can be reduced by
13 combining the removal data and efficiency data from both facilities, if the certificate holder can
14 demonstrate that the calculation of fatality rates will continue to have statistical validity for both
15 facilities and that combining the data will not affect any other requirements of the monitoring
16 plans for either facility.

17 (e) Fatality Monitoring Search Protocol

18 The objective of fatality monitoring is to estimate the number of bird and bat fatalities
19 that are attributable to facility operation and associated variances. The certificate holder shall
20 conduct fatality monitoring using standardized carcass searches.

21 The certificate holder shall use a worst-case analysis to resolve any uncertainty in the
22 results and to determine whether the data indicate that additional mitigation should be
23 considered. The Department may require additional, targeted monitoring if the data indicate the
24 potential for significant impacts that cannot be addressed by worst-case analysis and appropriate
25 mitigation.

26 The certificate holder shall estimate the number of avian and bat fatalities attributable to
27 operation of the facility based on the number of avian and bat fatalities found at the facility site.
28 All carcasses located within areas surveyed, regardless of species, will be recorded and, if
29 possible, a cause of death determined based on blind necropsy results. If a different cause of
30 death is not apparent, the fatality will be attributed to facility operation. The total number of
31 avian and bat carcasses will be estimated by adjusting for removal and searcher efficiency bias.

32 Personnel trained in proper search techniques ("the searchers") will conduct the carcass
33 searches by walking parallel transects within the search plots.³ Transects will be initially set at 6
34 meters apart in the area to be searched. A searcher will walk at a rate of about 45 to 60 meters
35 per minute along each transect searching both sides out to three meters for casualties. Search area
36 and speed may be adjusted by habitat type after evaluation of the first searcher efficiency trial.
37 The searchers will record the condition of each carcass found, using the following condition
38 categories:

- 39 ■ Intact – a carcass that is completely intact, is not badly decomposed and shows no
40 sign of being fed upon by a predator or scavenger

³ Where search plots are adjacent, the search area may be rectangular.

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- 1 ▪ Scavenged – an entire carcass that shows signs of being fed upon by a predator or
2 scavenger, or portions of a carcass in one location (e.g., wings, skeletal remains, legs,
3 pieces of skin, etc.)
- 4 ▪ Feather Spot – 10 or more feathers at one location indicating predation or scavenging
5 or 2 or more primary feathers

6 All carcasses (avian and bat) found during the standardized carcass searches will be
7 photographed as found, recorded and labeled with a unique number. Distance from observer to
8 the carcass will be measured (to the nearest 0.25 meters), as will the perpendicular distance from
9 the transect line to the carcass. Each carcass will be bagged and frozen for future reference and
10 possible necropsy. A copy of the data sheet for each carcass will be kept with the carcass at all
11 times. For each carcass found, searchers will record species, sex and age when possible, date and
12 time collected, location, condition (e.g., intact, scavenged, feather spot) and any comments that
13 may indicate cause of death. Searchers will map the find on a detailed map of the search area
14 showing the location of the wind turbines and associated facilities such as power lines. The
15 certificate holder shall coordinate collection of state endangered, threatened, sensitive or other
16 state protected species with ODFW. The certificate holder shall coordinate collection of
17 federally-listed endangered or threatened species and Migratory Bird Treaty Act protected avian
18 species with the U.S. Fish and Wildlife Service (USFWS). The certificate holder shall obtain
19 appropriate collection permits from ODFW and USFWS.

20 The searchers might discover carcasses incidental to formal carcass searches (e.g., while
21 driving within the project area). For each incidentally discovered carcass, the searcher shall
22 identify, photograph, record data and collect the carcass as would be done for carcasses within
23 the formal search sample during scheduled searches

24 If the incidentally discovered carcass is found within a formal search plot, the fatality
25 data will be included in the calculation of fatality rates. If the incidentally discovered carcass is
26 found outside a formal search plot, the data will be reported separately.

27 The certificate holder shall coordinate collection of incidentally discovered state
28 endangered, threatened, sensitive or other state protected species with ODFW. The certificate
29 holder shall coordinate collection of incidentally discovered federally-listed endangered or
30 threatened species and Migratory Bird Treaty Act protected avian species with the USFWS.

31 The certificate holder shall develop and follow a protocol for handling injured birds. Any
32 injured native birds found on the facility site will be carefully captured by a trained project
33 biologist or technician and transported to Jean Cypher (wildlife rehabilitator) in The Dalles, the
34 Blue Mountain Wildlife Rehabilitation Center in Pendleton or the Audubon Bird Care Center in
35 Portland in a timely fashion.⁴ The certificate holder shall pay costs, if any are charged, for time
36 and expenses related to care and rehabilitation of injured native birds found on the site, unless
37 the cause of injury is clearly demonstrated to be unrelated to the facility operations.

38 (f) Statistical Methods for Fatality Estimates

39 The estimate of the total number of wind facility-related fatalities is based on:

⁴ The people and centers listed here may be changed with Department approval.

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- 1 (1) The observed number of carcasses found during standardized searches during the two
2 monitoring years for which the cause of death is attributed to the facility.⁵
- 3 (2) Searcher efficiency expressed as the proportion of planted carcasses found by
4 searchers.
- 5 (3) Non-removal rates expressed as the estimated average probability a carcass is
6 expected to remain in the study area and be available for detection by the searchers
7 during the entire survey period.

8 Definition of Variables

9 The following variables are used in the equations below:

- 10 c_i the number of carcasses detected at plot i for the study period of interest (e.g., one
11 year) for which the cause of death is either unknown or is attributed to the facility
- 12 n the number of search plots
- 13 k the number of turbines searched (includes the turbines centered within each
14 search plot and a proportion of the number of turbines adjacent to search plots to
15 account for the effect of adjacent turbines on the 90-meter search plot buffer area)
- 16 \bar{c} the average number of carcasses observed per turbine per year
- 17 s the number of carcasses used in removal trials
- 18 s_c the number of carcasses in removal trials that remain in the study area after 40
19 days
- 20 se standard error (square of the sample variance of the mean)
- 21 t_i the time (days) a carcass remains in the study area before it is removed
- 22 \bar{t} the average time (days) a carcass remains in the study area before it is removed
- 23 d the total number of carcasses placed in searcher efficiency trials
- 24 p the estimated proportion of detectable carcasses found by searchers
- 25 I the average interval between searches in days
- 26 $\hat{\pi}$ the estimated probability that a carcass is both available to be found during a
27 search and is found
- 28 m_t the estimated annual average number of fatalities per turbine per year, adjusted
29 for removal and observer detection bias
- 30 C nameplate energy output of turbine in megawatts (MW)

31 Observed Number of Carcasses

32 The estimated average number of carcasses (\bar{c}) observed per turbine per year is:

⁵ If a different cause of death is not apparent, the fatality will be attributed to facility operation.

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$$\bar{c} = \frac{\sum_{i=1}^n c_i}{k} \quad (1)$$

Estimation of Carcass Removal

Estimates of carcass removal are used to adjust carcass counts for removal bias. Mean carcass removal time (\bar{t}) is the average length of time a carcass remains at the site before it is removed:

$$\bar{t} = \frac{\sum_{i=1}^s t_i}{s - s_c} \quad (2)$$

This estimator is the maximum likelihood estimator assuming the removal times follow an exponential distribution and there is right-censoring of data. Any trial carcasses still remaining at 40 days are collected, yielding censored observations at 40 days. If all trial carcasses are removed before the end of the trial, then s_c is 0, and \bar{t} is just the arithmetic average of the removal times. Removal rates will be estimated by carcass size (small and large) and season.

Estimation of Observer Detection Rates

Observer detection rates (i.e., searcher efficiency rates) are expressed as p , the proportion of trial carcasses that are detected by searchers. Observer detection rates will be estimated by carcass size and season.

Estimation of Facility-Related Fatality Rates

The estimated per turbine annual fatality rate (m_t) is calculated by:

$$m_t = \frac{\bar{c}}{\hat{\pi}} \quad (3)$$

where $\hat{\pi}$ includes adjustments for both carcass removal (from scavenging and other means) and observer detection bias assuming that the carcass removal times t_i follow an exponential distribution unless a different assumption about carcass removal is made with the approval of the Department. Under these assumptions, this detection probability is estimated by:

$$\hat{\pi} = \frac{\bar{t} \cdot p}{I} \cdot \left[\frac{\exp\left(\frac{I}{\bar{t}}\right) - 1}{\exp\left(\frac{I}{\bar{t}}\right) - 1 + p} \right] \quad (4)$$

The estimated per MW annual fatality rate (m) is calculated by:

$$m = \frac{m_t}{C} \quad (5)$$

The certificate holder shall calculate fatality estimates for: (1) all birds, (2) small birds, (3) large birds, (4) raptors, (5) target grassland birds, (6) nocturnal avian migrants, (7) avian State Sensitive Species listed under OAR 635-100-0040, and 8) bats. The final reported estimates of m , associated standard errors and 90% confidence intervals will be calculated using bootstrapping (Manly 1997). Bootstrapping is a computer simulation technique that is useful for

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1 calculating point estimates, variances and confidence intervals for complicated test statistics. For
 2 each iteration of the bootstrap, the plots will be sampled with replacement, trial carcasses will be
 3 sampled with replacement and \bar{c} , \bar{t} , p , $\hat{\pi}$ and m will be calculated. A total of 5,000 bootstrap
 4 iterations will be used. The reported estimates will be the means of the 5,000 bootstrap estimates.
 5 The standard deviation of the bootstrap estimates is the estimated standard error. The lower 5th
 6 and upper 95th percentiles of the 5000 bootstrap estimates are estimates of the lower limit and
 7 upper limit of 90% confidence intervals.

8 Nocturnal Migrant and Bat Fatalities

9 Differences in observed nocturnal avian migrant and bat fatality rates for lit turbines,
 10 unlit turbines that are adjacent to lit turbines, and unlit turbines that are not adjacent to lit
 11 turbines will be compared graphically and statistically.

12 (g) Mitigation

13 Mitigation may be appropriate if analysis of the fatality data collected after two
 14 monitoring years shows fatality rates for avian species that exceed a threshold of concern. For
 15 the purpose of determining whether a threshold has been exceeded, the certificate holder shall
 16 calculate the average annual fatality rates for the species groups after the initial two years of
 17 monitoring. Based on current knowledge of the species that are likely to use the habitat in the
 18 area of the facility, the following thresholds apply to the BCWF:

Species Group	Threshold of Concern (fatalities per MW)
Raptors (All eagles, hawks, falcons and owls, including burrowing owls.)	0.09
Raptor species of special concern (Swainson's hawk, ferruginous hawk, peregrine falcon, golden eagle, bald eagle, burrowing owl and any federal threatened or endangered raptor species.)	0.06
Target grassland birds (All native bird species that rely on grassland habitat and are either resident species, occurring year round, or species that nest in the area, excluding horned lark, burrowing owl and northern harrier.)	0.59
State sensitive avian species listed under OAR 635-100-0040 (Excluding raptors listed above.)	0.20
Bat species as a group	2.50
Guyed Meteorological Tower Mortality	
Raptor T&E species and raptor species of special concern, as a group (Swainson's hawk, ferruginous hawk, golden eagle and burrowing owl; bald eagle, peregrine falcon, and any other federal threatened or endangered raptor species)	0.20/ guyed tower
Avian State Sensitive Species listed under OAR 635-100-0040 (Excluding raptors)	0.20/ guyed tower

19 In addition, mitigation may be appropriate if fatality rates for individual species
 20 (especially State Sensitive Species) are higher than expected and at a level of biological concern.
 21 If the data show that a threshold of concern for a species group has been exceeded or that the
 22 fatality rate for any individual species is at a level of biological concern, mitigation shall be
 23 required if the Department determines that mitigation is appropriate based on analysis of the data
 24 and any other significant information available at the time. If mitigation is appropriate, the
 25 certificate holder, in consultation with ODFW, shall propose mitigation measures designed to

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1 benefit the affected species. This may take into consideration whether mitigation required or
2 provided for other impacts, such as raptor nesting or grassland bird displacement, would also
3 benefit the affected species.

4 The certificate holder shall implement mitigation as approved by the Council. The
5 Department may recommend additional, targeted data collection if the need for mitigation is
6 unclear based on the information available at the time. The certificate holder shall implement
7 such data collection as approved by the Council.

8 Mitigation shall be designed to benefit the affected species group. Mitigation may
9 include, but is not limited to, protection of nesting habitat for the affected group of native species
10 through a conservation easement or similar agreement. Tracts of land that are intact and
11 functional for wildlife are preferable to degraded habitat areas. Preference should be given to
12 protection of land that would otherwise be subject to development or use that would diminish the
13 wildlife value of the land. In addition, mitigation measures might include: enhancement of the
14 protected tract by weed removal and control; increasing the diversity of native grasses and forbs;
15 planting sagebrush or other shrubs; constructing and maintaining artificial nest structures for
16 raptors; reducing cattle grazing; improving wildfire response; and local research that would aid
17 in understanding more about the species and conservation needs.

18 If the threshold for bats species as a group is exceeded, the certificate holder shall
19 contribute to Bat Conservation International or to a Pacific Northwest bat conservation group
20 (\$10,000 per year for three years) to fund new or ongoing research in the Pacific Northwest to
21 better understand impacts to the bat species impacted by the facility and to develop possible
22 ways to reduce impacts to the affected species.

23 In addition, mitigation may be appropriate if fatality rates for a State Sensitive bat species
24 listed under OAR 635-100-0040 are higher than expected and at a level of concern. If the data
25 show that a threshold of concern for a species group has been exceeded or that the fatality rate
26 for any individual species is at a level of concern, mitigation shall be required if the Department
27 determines that mitigation is appropriate based on analysis of the data and any other significant
28 information available at the time. If mitigation is appropriate, the certificate holder, in
29 consultation with ODFW, shall propose mitigation measures designed to benefit the affected
30 species. The certificate holder shall implement mitigation as approved by the Council.

2. Raptor Nest Surveys

31 The objectives of raptor nest surveys are to estimate the size of the local breeding
32 populations of tree or other above-ground-nesting raptor species in the vicinity of the facility and
33 to determine whether operation of the facility results in a reduction of nesting activity or nesting
34 success in the local populations of the following raptor species: Swainson's hawk, ferruginous
35 hawk and golden eagle. The certificate holder shall direct a qualified biologist, approved by the
36 Department, to conduct the raptor nest surveys. The Department has approved the qualifications
37 of the four biologists identified in the Final Order on Amendment #2. The certificate holder may
38 select other qualified biologists to conduct the raptor nest surveys, subject to Department
39 approval.

(a) Survey Protocol

41 For the species listed above, aerial and ground surveys will be used to gather nest success
42 data on active nests, nests with young and young fledged. The certificate holder will share the

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1 data with state and federal biologists. The certificate holder shall conduct two years of post-
2 construction raptor nest surveys for each phase of construction and long-term raptor nest surveys
3 for the completed facility during the sensitive nesting and breeding season. One year of post-
4 construction surveys will be done in the first nesting season after construction of the phase is
5 completed. The second year of post-construction surveys will be done after construction of the
6 phase is completed at a time recommended by the certificate holder and approved by the
7 Department. Long-term surveys will be conducted starting in the fifth year following completion
8 of the last post-construction survey and each five years thereafter for the life of the facility. The
9 certificate holder may collaborate with other certificate holders in the vicinity of the facility in
10 the development of useful information about future impacts on raptor nesting activity and nesting
11 success.

12 Prior to the raptor nesting surveys, the certificate holder shall review the locations of
13 known raptor nests based on the BCWF and Klondike Wind Project pre-construction surveys as
14 well as any nest survey data collected after construction. All known nest sites and any new nests
15 observed within the BCWF site and within two miles of the BCWF site will be given
16 identification numbers. Nest locations will be recorded on U.S. Geological Survey 7.5-minute
17 quadrangle maps. Global positioning system coordinates will be recorded for each nest and
18 integrated with the baseline database. Locations of inactive nests will also be recorded as they
19 may become occupied during future years.

20 During each raptor nesting monitoring year, the certificate holder shall conduct a
21 minimum of one helicopter survey in late May or early June within the BCWF site and a 2-mile
22 zone around the turbines to determine nest occupancy. Determining nest occupancy will likely
23 require two visits to each nest: The second visit may be done by air or by ground as appropriate.
24 For occupied nests of the species identified above, the certificate holder shall determine nesting
25 success by a minimum of one ground visit to determine species, number of young and nesting
26 success. "Nesting success" means that the young have successfully fledged (the young are
27 independent of the core nest site). Nests that cannot be monitored due to the landowner denying
28 access will be checked from a distance where feasible.

29 (b) Mitigation

30 The certificate holder shall analyze the raptor nesting data collected after two monitoring
31 years to determine whether a reduction in either nesting success or nest use has occurred in the
32 vicinity of the BCWF. If the analysis indicates a reduction in nesting success by Swainson's
33 hawk, ferruginous hawk or golden eagle within two miles of the facility (including the area
34 within the BCWF site), then the certificate holder shall propose appropriate mitigation and shall
35 implement mitigation as approved by the Council. At a minimum, if the analysis shows that any
36 of these species has abandoned a nest territory within the facility site or within ½ mile of the
37 facility site, or has not fledged any young over the two-year period within the facility site or
38 within ½ mile of the facility site, the certificate holder shall assume the abandonment or
39 unsuccessful fledging is the result of the facility unless another cause can be demonstrated
40 convincingly. If the BCWF facility and the Klondike III facility are both required to provide
41 mitigation for the same nest, the two certificate holders shall coordinate the required mitigation
42 with the approval of the Department.

43 Given the very low buteo nesting densities in the area, statistical power to detect a
44 relationship between distance from a wind turbine and nesting parameters (e.g., number of

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1 fledglings per reproductive pair) will be very low. Therefore, impacts may have to be judged
2 based on trends in the data, results from other wind energy facility monitoring studies and
3 literature on what is known regarding the populations in the region.

4 If the analysis shows that mitigation is appropriate, the certificate holder shall propose
5 mitigation for the affected species in consultation with the Department and ODFW, and shall
6 implement mitigation as approved by the Council. Mitigation should be designed to benefit the
7 affected species or contribute to overall scientific knowledge and understanding of what causes
8 nest abandonment or nest failure. Mitigation may be designed to proceed in phases over several
9 years. It may include, but is not limited to, additional raptor nest monitoring, protection of
10 natural nest sites from human disturbance or cattle activity (preferably within the general area of
11 the facility), or participation in research projects designed to improve scientific understanding of
12 the needs of the affected species. Mitigation may take into consideration whether mitigation
13 required or provided for other impacts, such as fatality impacts or grassland bird displacement,
14 would also benefit the raptor species whose nesting success was adversely affected.

3. Avian Use and Behavior Surveys

15 The certificate holder shall conduct a before/after avian behavior and monitoring study to
16 determine whether operation of the BCWF reduces bird use and abundance in the area (often
17 referred to as displacement). The results of this study will aid in estimating indirect avian
18 impacts of the BCWF and guide potential mitigation.

19 The before/after study will use two of the observation stations that were used during the
20 baseline study (H and I) and two new survey stations (A5 and A6).⁶ Avian use and behavior will
21 be monitored at these four stations 6 times each month from November 2005 – August 15, 2006
22 (pre-construction period) and 6 times each month during two post-construction monitoring years
23 (after construction of wind turbines located near these survey stations).⁷

24 These four stations are located in the northeastern portion of the BCWF area near the
25 John Day River canyon. The areas surrounding these survey stations were subject to numerous
26 micrositing decisions during facility layout. Primary micrositing decisions included shortening
27 and re-orientating turbine corridors to avoid native habitat, maintaining a minimum one-mile
28 distance from the centerline of the John Day River, and avoiding locating turbines on steep
29 slopes.

30 Each survey will consist of one 30-minute observation period at each of these four
31 stations using the same protocol that was used for baseline data collection. In particular, raptor
32 and waterfowl use estimates and behavior relative to turbine locations and flight path maps will
33 be compared between the pre- and post-construction periods to provide information on raptor
34 and waterfowl displacement and to estimate indirect impacts on raptors and waterfowl. The
35 phrase “behavior relative to turbine locations” is intended to address observations of behavior
36 that is different near turbines compared to behavior away from turbines.

37 In addition to surveys at these four stations, searchers will also record bird species
38 observed and their behavior relative to turbine locations before or after each standardized carcass

⁶ The observation stations are identified in a report by Western EcoSystems Technology, Inc., “John Day Avian Studies for the Biglow Canyon Wind Farm Project, February 2007.”

⁷ Fewer than 6 monitoring sessions may be conducted if necessary due to safety reasons or severe weather.

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1 search (as described in Section 1(e) above). Observations will be recorded during 5-minute
2 surveys at each turbine sampled during the fatality monitoring program, using standard variable
3 circular plot point count survey methods. Collection and recording of these additional
4 observations of live birds will be carried out in a manner that does not distract searchers from
5 carrying out the standardized carcass searches.

6 All of these avian use and behavior data, as well as raptor and waterfowl mortality
7 observed at the turbines near these stations, will be used to understand direct and indirect impacts
8 of the BCWF facility on raptors, waterfowl and other avian species. The certificate holder shall
9 include an analysis of this data in the reports described in Section 5.

4. Biglow Wildlife Incident Response and Handling System

10 The Wildlife Incident Response and Handling System is a monitoring program set up for
11 responding to and handling avian and bat casualties found by construction and maintenance
12 personnel during construction and operation of the facility. This monitoring program includes the
13 initial response, the handling and the reporting of bird and bat carcasses discovered incidental to
14 construction and maintenance operations ("incidental finds"). Construction and maintenance
15 personnel will be trained in the methods needed to carry out this program.

16 All carcasses discovered by construction or maintenance personnel will be photographed,
17 recorded and collected.

18 If construction or maintenance personnel find carcasses within the plots for protocol
19 searches, they will notify a qualified biologist, as approved by the Department, who will collect
20 the carcasses. The fatality data will be included in the calculation of fatality rates.

21 If construction or maintenance personnel discover incidental finds that are not within
22 plots for fatality monitoring protocol searches, they will notify a qualified biologist, as approved
23 by the Department, and the carcass will be collected by a carcass-handling permittee (a person
24 who is listed on state and federal scientific or salvage collection permits). Data for these
25 incidental finds will be reported separately from standardized fatality monitoring data.

26 The certificate holder shall coordinate collection of state endangered, threatened,
27 sensitive or other state protected species with ODFW. The certificate holder shall coordinate
28 collection of federally-listed endangered or threatened species and Migratory Bird Treaty Act
29 protected avian species with the USFWS.

5. Data Reporting

30 The certificate holder will report the monitoring data and analysis to the Department.
31 Monitoring data include fatality monitoring program data, raptor nest survey data, avian use and
32 behavior survey data and data on incidental finds by fatality searchers and BCWF personnel. The
33 report may be included in the annual report required under OAR 345-026-0080 or may be
34 submitted as a separate document at the same time the annual report is submitted. In addition, the
35 certificate holder shall provide to the Department any data or record generated in carrying out
36 this monitoring plan upon request by the Department.

37 The certificate holder shall immediately notify USFWS and ODFW, respectively, in the
38 event that any federal or state endangered or threatened species are killed or injured on the
39 facility site.

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1 The public will have an opportunity to receive information about monitoring results and
2 to offer comment. Within 30 days after receiving the annual report of monitoring results, the
3 Department will make the report available to the public on its website and will specify a time in
4 which the public may submit comments to the Department.⁸

6. Amendment of the Plan

5 This Wildlife Monitoring and Mitigation Plan may be amended from time to time by
6 agreement of the certificate holder and the Council. Such amendments may be made without
7 amendment of the site certificate. The Council authorizes the Department to agree to
8 amendments to this plan and to mitigation actions that may be required under this plan. The
9 Department shall notify the Council of all amendments and mitigation actions, and the Council
10 retains the authority to approve, reject or modify any amendment of this plan or mitigation action
11 agreed to by the Department.

⁸ The certificate holder may establish a Technical Advisor Committee (TAC) but is not required to do so. If the certificate holder establishes a TAC, the TAC may offer comments to the Council about the results of the monitoring required under this plan.

BIGLOW CANYON WIND FARM: REVEGETATION PLAN
[MARCH 10, 2007]

1 **BACKGROUND**

2 This plan describes methods and standards for revegetating areas temporarily disturbed
3 during the construction of the proposed Biglow Canyon Wind Farm (BCWF), sited about 2.5
4 miles northeast of Wasco, Oregon.¹ The objective of this plan is to restore temporarily disturbed
5 areas to pre-construction condition or better. The site certificate for the facility requires
6 restoration of these areas.

7 The BCWF is located on privately owned agricultural land used primarily for dry wheat
8 production and, to a lesser extent, cattle grazing. The grazed land is grassland, shrub-steppe
9 rangeland and/or fallow wheat stubble fields. A few large tracts of land have been enrolled in the
10 Conservation Reserve Program (CRP).

11 This plan specifies seed mixes, planting methods, and weed control techniques developed
12 specifically for the BCWF through consultations with the affected agencies (e.g., the Oregon
13 Department of Fish and Wildlife and the Natural Resources Conservation Service), reviews of
14 current literature, and site visits by revegetation specialists. This plan also specifies monitoring
15 procedures to evaluate the success of revegetation efforts, including recommended remedial
16 action should initial revegetation efforts prove unsuccessful.

17 **REVEGETATION PROCEDURES**

18 The following methods are to be used in areas of temporary ground and/or vegetation
19 disturbance in cultivated areas and in the Conservation Reserve Program (CRP) grasslands and
20 native grassland and shrub-steppe upland habitats throughout the BCWF site. Because no
21 disturbance to wetland habitats is expected, this plan does not specify wetland revegetation
22 methods.

23 **Cultivated Areas**

24 The site certificate holder shall reseed cultivated agricultural areas. The species
25 composition, seed and fertilizer application rates, and application method shall be coordinated
26 with the appropriate landowner and/or farmer.

27 **Seed Mixture**

28 Temporarily disturbed areas in non-cultivated areas are primarily CRP lands, with some
29 additional grassland and shrub-steppe areas. A seed mixture was developed in consultation with
30 Mary Beth Smith at the local Natural Resources Conservation Service office based upon
31 anticipated high value to both big game and non-game wildlife, and the historic vegetative
32 climax community for the area (Table 1).

¹ This plan is incorporated by reference in the site certificate for the BCWF and must be understood in that context. It is not a "stand-alone" document. This plan does not contain all mitigation required of the certificate holder.

BIGLOW CANYON WIND FARM: REVEGETATION PLAN
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1 Seed Planting Methods

2 Planting shall occur in February through early April (after the last chance of frost because
3 forbs are being used in the seed mixture) for disturbance that occurs during the winter and
4 spring. Planting shall occur in October through November for disturbance that occurs after the
5 spring seeding window. Disturbed, unseeded ground may require chemical or mechanical weed
6 control in May or June before weeds have a chance to go to seed. In general, a weed-free
7 seedbed shall be prepared using conventional tillage equipment, herbicide treatment, or both.
8 Herbicide shall be sprayed to control weedy and/or noxious species, following the Oregon
9 Department of Agriculture's Guidelines. Summer fallowing may be required.

10 Areas to be seeded shall be disked, as needed, in early spring and spot-sprayed on the
11 ground with an herbicide. In some instances, disking the site may not be needed prior to seeding.
12 Simply preparing a weed-free site using herbicide treatments may be all that is necessary. These
13 areas shall then be harrowed prior to seeding. A conventional seed drill shall be used, except in
14 areas where a rangeland drill is deemed more applicable, with a spacing less than 12 inches and
15 at a depth of 1/8 to 1/4 inch. A packing type roller shall be used to properly compact the soil over
16 the planted seed. The prescribed seed mixture (Table 1) shall be drilled at a rate of 12 pounds
17 pure live seed per acre. If fallowing the area is to be used to increase soil moisture content, then
18 the same procedure shall be followed, but without seeding. Seeding would then occur the
19 following spring.

20 MONITORING

21 The site certificate holder shall direct a qualified botanist or revegetation specialist,
22 approved by the Oregon Department of Energy (Department), to conduct monitoring of seeded
23 grassland, shrub-steppe and CRP areas.

24 In the fall of the year following each seeding, and continuing annually thereafter until the
25 vegetation success criteria have been met, the qualified investigator shall examine a
26 representative cross-section of the revegetated sites. At each site, the investigator shall evaluate
27 the percent cover for the following classes:

- 28 • native forbs and grasses;
- 29 • non-native forbs and grasses;
- 30 • shrubs; and
- 31 • bare ground and rock.

32 After the success criteria have been met, the qualified investigator shall revisit the sites at
33 least every five years for the life of the facility to ensure that the habitat has not degraded.² The
34 site certificate holder shall report the investigator's findings and recommendations regarding
35 revegetation progress and success to the Department on an annual basis as part of the annual
36 report on BCWF.

² As used in this plan, "life of the facility" means continuously until the facility site is restored and the site certificate is terminated in accordance with OAR 345-027-0110.

BIGLOW CANYON WIND FARM: REVEGETATION PLAN
[MARCH 10, 2007]

SUCCESS CRITERIA

Non-cultivated areas will be deemed successfully revegetated when total canopy cover of all vegetation exceeds 30 percent³, and at least 25 percent of the ground surface is covered by native species and species in the seed mixture.

In each monitoring report to the Department, the certificate holder shall provide an assessment of revegetation success in grassland, shrub-steppe and CRP restoration areas. The Department may require reseeding or other corrective measures in those areas that do not meet the success criteria. The Department may exclude small areas from the reseeding requirement, if erosion from construction activities is low, if total vegetative cover (of native and non-native species together) exceeds 30 percent and if weed encroachment has made native seed establishment impossible. Cultivated agricultural areas are successfully revegetated if the replanted areas achieve crop production comparable to adjacent non-disturbed cultivated areas. The certificate holder shall consult with the landowner or farmer to determine whether these areas have been successfully revegetated and shall report to the Department on the success of revegetation in these areas.

AMENDMENT OF PLAN

This Revegetation Plan may be amended by agreement of the certificate holder and the Energy Facility Siting Council (Council). Such amendments may be made without amendment of the site certificate. The Council authorizes the Department to agree to amendments to this plan. The Department shall notify the Council of all amendments, and the Council retains the authority to approve, reject or modify any amendment of this plan agreed to by the Department.

Table 1. Seed mixture to be used for revegetation of temporarily disturbed areas.		
Common Name	Scientific Name	Pounds of pure live seed/ Acre
Luna pubescent wheatgrass	<i>Thinopyrum intermedium</i>	1
Sherman big bluegrass	<i>Poa ampla</i>	1
Magnar basin wildrye	<i>Leymus cinereus</i>	1
Whitmar beardless wheatgrass	<i>Pseudoroegneria spicata</i> ssp. <i>Inermis</i>	2
Small burnett	<i>Sanguisorba minor</i>	0.5
Alfalfa	<i>Medicago sativa</i>	1
Sanfoin	<i>Psoralea onobrychis</i>	0.5
Sandberg bluegrass	<i>Poa secunda</i>	2
Idaho fescue	<i>Festuca idahoensis</i>	2
Basin big sagebrush	<i>Artemisia tridentata</i> ssp. <i>Tridentate</i>	1
TOTAL		12

³ NRCS Draft Guidelines for CRP Stand Certification

BIGLOW CANYON WIND FARM: HABITAT MITIGATION PLAN

[MAY 10, 2007]

I. Introduction

This Habitat Mitigation Plan (plan) describes methods and standards for enhancement of an area of land near the Biglow Canyon Wind Farm (BCWF) to mitigate for certain impacts of the facility on wildlife habitat.¹ The applicant has proposed a habitat mitigation area of approximately 117 acres as described below. The certificate holder shall enhance the mitigation area as described in this plan and shall place the area into a conservation easement for the life of the facility.²

The objective of the enhancement methods is to improve the habitat value of the mitigation area and to protect the area for wildlife use for the life of the facility. This plan has been prepared to guide the habitat enhancement efforts within the mitigation area. The plan specifies the primary actions the certificate holder must undertake and the goals, monitoring procedures, and success criteria to evaluate enhancement success.

Prior to any construction of the BCWF, the site certificate holder shall acquire the legal right to create, maintain and protect the habitat mitigation area for the life of the facility by means of an outright purchase, conservation easement or similar conveyance and shall provide a copy of the documentation to the Oregon Department of Energy (Department). Prior to any construction of the BCWF, the site certificate holder shall complete an "Implementation Plan" approved by the Department that describes in detail how the Habitat Mitigation Plan will be carried out. During the first phase of construction of the BCWF, the site certificate holder shall begin to implement this plan so that all of the specific enhancement methods described in Section VII are in place by the end of construction of that first phase.

II. Description of the Permanent Impacts

The BCWF would permanently affect a maximum of about 178 acres. Most of the area of permanent impact (about 167 acres) would be within currently cultivated agricultural fields or other developed land. This area is lower-value habitat (Category 6). The BCWF would occupy – or have a permanent impact on – a maximum of about 11.93 acres of higher-value Category 3 or Category 4 habitat. The actual area of each habitat category that the BCWF will permanently occupy will depend on the final design layout of the facility after consideration of micrositing factors.

Data collected at other wind energy facilities indicate that the operation of wind turbines may adversely affect the quality of nearby habitat that is important or essential for grassland avian species. This is often referred to as a "displacement" impact. Conducting a study at the BCWF site to determine whether operation of the facility had a displacement effect on grassland birds would take several years. If the study concluded that an adverse impact had occurred, additional mitigation would be needed. In lieu of conducting a multi-year study, the certificate

¹ This plan is incorporated by reference in the site certificate for the BCWF and must be understood in that context. It is not a "stand-alone" document. This plan does not contain all mitigation required of the certificate holder.

² As used in this plan, "life of the facility" means continuously until the facility site is restored and the site certificate is terminated in accordance with OAR 345-027-0110.

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holder has proposed to provide additional mitigation, based on the assumed likelihood that operation of the facility would reduce the quality of nearby habitat that is important or essential for grassland bird species. The affected habitat near the BCWF wind turbines includes grassland, Conservation Reserve Program (CRP) and shrub-steppe habitat in Categories 3 and 4.

As defined by the fish and wildlife habitat mitigation goals and standards of the Oregon Department of Fish and Wildlife (ODFW), the affected habitat and corresponding mitigation goals are as follows:

- **Category 3:** Essential habitat for fish and wildlife, or important habitat for fish and wildlife that is limited either on a physiographic province or site-specific basis, depending on the individual species or population.

Mitigation Goal: No net loss of either habitat quantity or quality. Mitigation must be in-kind.

- **Category 4:** Important habitat for fish and wildlife species.

Mitigation Goal: No net loss in either existing habitat quantity or quality. Mitigation may be either in-kind or out-of-kind.

III. Calculation of Impacts and Size of Mitigation Area

The area needed to mitigate for the amount of higher-value habitat occupied by the BCWF turbines and related facilities is determined by the facility's permanent impact within each habitat category. The amount of additional area needed to mitigate for a displacement effect that is uncertain cannot be precisely calculated. To determine a reasonable area for displacement mitigation, the applicant has performed a rough calculation of potential displacement impact by assuming a 50-percent reduction in use by grassland birds within 50 meters of wind turbines in native grassland/shrub steppe habitat and a 25 percent reduction in use by grassland birds within 50 meters of wind turbines in CRP habitat.³ The applicant further assumed that the final design locations of wind turbines within the micro-siting corridors would be such that the maximum area of native grassland would be affected (the "worst case"). The area of impact within each affected habitat category and the corresponding mitigation area for each category are as follows:

- The permanent impact is about 11.93 acres, of which about 8.41 acres are Category 3 habitat (grassland, CRP and shrub-steppe combined) and about 3.52 acres are Category 4 habitat (grassland, CRP and shrub-steppe combined).
- The calculated potential displacement impact is estimated to be about 33 acres, of which about 67 percent is Category 3 CRP habitat, 2 percent is Category 3 grassland/shrub steppe habitat, 26 percent is Category 4 CRP habitat, and 4 percent is Category 4 grassland/shrub steppe habitat.⁴
- The combined impacts equal about 45 acres. Mitigation must be sufficient to replace the quantity and quality of this combined impact in order to achieve "no net loss" in habitat quantity or quality. The mitigation area must be large enough

³ The method of determining a reasonable mitigation area as described in this plan is not intended to be a precise formula or a precedent for determining appropriate mitigation for any other facility.

⁴ Percentages based on information from Wally Erickson, WEST, Inc., in a personal communication with Tom Meehan, consultant for the Department, during the review of the site certificate application.

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1 to be capable of achieving this goal. The certificate holder has secured a 117-acre
2 mitigation area, based on the understanding that mitigation acreage that exceeds
3 the actual acreage of permanent and indirect impacts may be applied to any future
4 mitigation requirements (this “mitigation banking” is discussed in Section IX).

5 If the data from transect surveys at the Stateline Wind Project demonstrates a statistically
6 significant displacement effect on grassland bird species that is greater than the displacement
7 effect described in the *Stateline Wind Project Wildlife Monitoring Final Report, July 2001-*
8 *December 2003*, then the certificate holder shall assume that the BCWF is having a greater
9 displacement effect on grassland species than was assumed when the site certificate was issued
10 and shall propose additional mitigation. The Department shall recommend appropriate mitigation
11 to the Council, and the certificate holder shall implement mitigation as approved by the Council.

12 **IV. Description of the Mitigation Site**

13 The mitigation site is located to the northeast of the BCWF, less than 0.5 miles from the
14 John Day River and just more than 0.5 miles from the nearest wind turbine. The site contains an
15 intermittent spring that forms a small tributary drainage immediately west of the Emigrant
16 Springs tributary and watershed.

17 Thus, the mitigation site sits immediately adjacent to both the John Day River riparian
18 corridor and the large Emigrant Springs watershed, which provides additional forage, thermal
19 and security cover, and water. No road access exists to the site, which is relatively remote and
20 infrequently disturbed by humans.

21 The site is predominantly steep-sloped with shallow rocky soils and has been both
22 recently and historically grazed. Areas most degraded from livestock grazing include the deeper
23 soiled areas and the spring and associated riparian draw in the southern end of the mitigation site.
24 Horizontal and vertical vegetative structure is largely depleted because of exposed slopes and
25 livestock grazing impacts, and large patches of cereal rye have out-competed native species in
26 some areas. However, the higher elevation western border consists of deeper silt loam soils, with
27 the potential to provide a more diverse vegetative community.

28 Adjacent property to the west is cultivated and managed for wheat production. Adjacent
29 property to the north and east is rangeland managed for livestock production. A four-strand
30 barbed wire fence exists along the east boundary of the mitigation site. No fence exists along the
31 crop field boundary to the east or along the north boundary; this area is grazed when fallow or
32 electric fence is used during the planting and harvest period to exclude livestock. The area
33 around the spring source and downstream lacks a vegetative buffer or a diverse vegetative
34 community because of intensive grazing. Some tall sagebrush cover exists near the stream area
35 while cattails and aquatic succulents occur in the spring source area.

36 Given the current condition of the site and livestock practices, the entire mitigation site is
37 generally characterized as Category 4 habitat, according to ODFW’s Habitat Mitigation
38 Standards.

39 **V. Site Potential for Wildlife Habitat Enhancement**

40 For mitigation, the applicant has proposed entering into a conservation easement or
41 similar agreement with two landowners to enhance the mitigation site’s existing grassland,

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1 shrub-steppe and riparian habitat for the life of the BCWF facility. The mitigation site presents
2 the opportunity to enhance grassland and shrub-steppe habitat quality and quantity that is limited
3 in the area for wildlife. Properly managed, the mitigation site has the potential to provide more
4 diverse grassland in greater quantity with greater horizontal and vertical structure. If enhanced
5 with reseeding, deeper soiled areas would provide better nesting habitat for grassland bird
6 species and provide higher quality forage for big game. Excluding livestock with fencing would
7 provide better fall, winter and early spring rangeland for big game by allowing Sandberg
8 bluegrass, bluebunch wheatgrass, and various forbs to grow undisturbed in shallow-soiled slopes.
9 Removal of cattle grazing should improve the habitat quality of the entire site and especially the
10 deeper-soiled, spring and riparian areas. The site's steeper areas also will see some benefit from
11 reduced grazing, especially during early spring green-up. As well, livestock exclusion would
12 enhance summer habitat for ground-nesting birds.

13 The mitigation site also has the potential to provide several different quality ecotones.⁵
14 Grassland patches in the lower-elevation eastern portion of the site may be of greater suitability
15 to long-billed curlews because of closer proximity to the John Day River, where observations of
16 this species breeding have been documented.

17 **VI. Proposed Enhancement**

18 To mitigate for the permanent loss of 11.93 acres of Category 3 and Category 4 habitat as
19 a result of BCWF turbines, roads and other facilities, the site certificate holder will reseed 11.93
20 acres of deep-soiled Category 4 habitat within the mitigation site along the upper, more level
21 slopes adjacent to cultivated areas. Reseeding is expected to improve about 11.93 acres of deep-
22 soiled Category 4 habitat to a quality of Category 2 or Category 3 grassland habitats.

23 To mitigate for the displacement effect, the site certificate holder will install fences to
24 remove livestock grazing from the 117-acre mitigation site. In combination with other actions
25 described below, fencing is expected to improve most of the portion of the mitigation site that is
26 not reseeded (about 105 acres) from Category 4 to at least Category 3 habitat.

27 The acreages stated above for maximum permanent and indirect displacement habitat
28 impacts (*i.e.*, 11.93 acres and 33 acres, respectively, or a total of about 45 acres) are based on
29 construction of the entire BCWF facility as approved under the site certificate. If only a portion
30 of the BCWF facility is constructed, the maximum permanent and indirect displacement habitat
31 impacts are expected to be less than 45 acres. Nevertheless, as part of the first phase of
32 construction, the certificate holder has proposed to secure the entire 117-acre mitigation site,
33 install the guzzler, enhance the spring area, and have the fencing installed to exclude livestock on
34 the entire mitigation site. If only a portion of the BCWF facility is constructed and full build-out
35 does not occur, then any enhanced mitigation acreage that exceeds the actual acreage of
36 permanent and indirect habitat impacts may be applied to any future mitigation requirements, as
37 outlined in the Wildlife Mitigation and Monitoring Plan and subject to approval by the
38 Department.

⁵ An "ecotone" is a transitional zone between ecological communities.

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VII. Habitat Enhancement Methods

The goal of habitat enhancement is to improve the habitat quality of the mitigation site to achieve, over time, a Category 3 quality over most of the site and a mix of Category 2 and Category 3 on 11.93 reseeded acres. The site certificate holder will use the following five methods to enhance habitat quality and quantity on the site:

1. Reseeding

The site certificate holder shall prepare and seed about 11.93 acres within two defined areas located along the western edge of the mitigation site.⁶

A. Seed Mixture: The site certificate holder developed a seed mixture in consultation with Mary Beth Smith at the local United States Department of Agriculture Natural Resources Conservation Service office based on anticipated high value to both big game and non-game wildlife and the historic vegetative climax community for the area (Table 1). Prior to seeding, the site certificate holder shall consult with the Department to determine if any mixture adjustments, either in species composition or ratio of seed quantity among species, would further benefit wildlife.

B. Seed Planting Methods: If enhancement efforts occur in the winter or spring, seeding should occur sometime in February through early April, after the average last frost date. If enhancement efforts occur after the spring seeding window, seeding should occur sometime in October through November. Disturbed, unseeded ground may require chemical or mechanical weed control in May or June before weeds go to seed. In general, a weed-free seedbed should be prepared using conventional tillage equipment. Herbicide should be sprayed to control weedy and/or noxious species, following Oregon Department of Agriculture's (ODOA) guidelines. Summer fallowing may be required. Areas to be seeded shall be disked as needed in early spring and spot-sprayed on the ground each time with an herbicide. In some instances, disking the site may not be needed prior to seeding. Simply preparing a weed-free site using herbicide treatments may be all that is necessary. The disked and sprayed areas must then be harrowed prior to seeding. A conventional seed drill must be used, except in areas where a rangeland drill is deemed more applicable, with a spacing less than 12 inches and at a depth of 1/8-1/4 inch. A packing type roller must be used to properly compact the soil over the planted seed. The prescribed seed mixture (Table 1) must be drilled at a rate of 12 pounds pure live seed per acre. If an area is to be fallowed to increase soil moisture content, then the same procedure must be followed, but without seeding. Seeding would then occur the following spring.

⁶ These two areas are identified in PGE's Habitat Mitigation Implementation Plan, February 2007, Appendix A.

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Table 1. Seed mixture to be used for reseeding deeper soiled areas of the mitigation site.		
Common Name	Scientific Name	Pounds/ Acre⁷
Luna pubescent wheatgrass	<i>Thinopyrum intermedium</i>	1
Sherman big bluegrass	<i>Poa ampla</i>	1
Magnar basin wildrye	<i>Leymus cinereus</i>	1
Whitmar beardless wheatgrass	<i>Pseudoroegneria spicata</i> ssp. <i>Inermis</i>	2
Small burnett	<i>Sanguisorba minor</i>	0.5
Alfalfa	<i>Medicago sativa</i>	1
Sanfoin	<i>Psoralea onobrychis</i>	0.5
Sandberg bluegrass	<i>Poa secunda</i>	2
Idaho fescue	<i>Festuca idahoensis</i>	2
Basin big sagebrush	<i>Artemisia tridentata</i> ssp. <i>Tridentate</i>	1
TOTAL		12

2. Weed Control

Large patches of nuisance weed species have out-competed native species in some areas of the mitigation site. The site certificate holder shall conduct eradication or control of nuisance weed species with measures approved by the Department.

3. Livestock Control

The site certificate holder shall fence the entire unfenced portion of the mitigation site to control and remove cattle grazing on the mitigation site. Over 9,200 feet of new fence will be installed following ODFW livestock fence specifications. The existing fence (4-strand barbed wire) located on the eastern edge of the project area and along a small 600 foot section running east/west along a portion of the northern border of the agricultural field will continue in use to the extent it remains effective in keeping cattle out of the mitigation site.

4. Creation of a Water Source

The site certificate holder shall create a water source for wildlife use in the northern end of the project area where no water source now exists. The site certificate holder will build and install a 500-gallon capacity cistern or “guzzler” using a design approved by ODFW and the Department. The new source of water should increase wildlife density in the mitigation site.

5. Spring Enhancement

The site certificate holder shall plant appropriate native species of woody shrubs near the source of the intermittent spring in the southern part of the site. Browse protection shall be provided as long as necessary. Over time, the shrubs will provide cover for wildlife as well as protect soils around the spring source.

VIII. Habitat Mitigation Implementation

Prior to the commencement of construction of the BCWF facility, the site certificate holder shall complete a Department-approved detailed implementation plan to guide implementation of the enhancement methods. The implementation plan shall include maps and

⁷ Pure live seed.

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1 photographs at appropriate scale and detail that show the topography, vegetation, habitat and
2 other site conditions of the mitigation site; the proposed locations of the primary actions required
3 by the mitigation plan; a schedule showing when the primary actions required in the mitigation
4 plan will occur; and a proposed monitoring plan including monitoring protocols, locations of
5 monitoring stations, and a schedule of monitoring actions. The implementation plan will take
6 into consideration the physical and biological features of the mitigation site such as slope, soil
7 depth, and existing habitat conditions, the appropriate time of year to conduct actions, and the
8 appropriate sequence of actions. The purpose of the implementation plan is to describe details of
9 applying the enhancement methods. The implementation plan is subject to the conditions of the
10 site certificate and the requirements contained in this Habitat Mitigation Plan as amended from
11 time to time.

12 The certificate holder shall not begin enhancement efforts until the Department has
13 reviewed and approved the implementation plan. Enhancement methods must be carried out
14 according to the schedule included in the implementation plan. The certificate holder shall take
15 all actions necessary to implement the Habitat Mitigation Plan, including ongoing maintenance
16 of the guzzler and fencing.

17 **IX. Monitoring**

18 **1. Qualifications**

19 For all components of this plan, the site certificate holder shall direct a qualified
20 biologist, approved by the Department, to perform monitoring tasks (the "investigator"). The
21 Department has approved the qualifications of the four biologists identified in the Final Order on
22 Amendment #2. The certificate holder may select other qualified biologists to perform the
23 monitoring tasks, subject to Department approval.

24 **2. Reporting Schedule and Duration/Type of Monitoring**

25 The site certificate holder shall provide an annual report discussing the investigator's
26 findings and recommendations regarding habitat mitigation progress and success to the
27 Department and ODFW. The site certificate holder shall include this report as part of the annual
28 report on the BCWF or as otherwise agreed between the site certificate holder and the
29 Department. The site certificate holder shall monitor the mitigation site for the life of the Biglow
30 facility.

31 For the reseeded areas, the investigator will monitor every year for the first five years
32 after the first seeding or until the area is determined by the Department to be trending toward
33 successful habitat enhancement. Thereafter, the investigator shall revisit the reseeded areas every
34 five years for the life of the BCWF facility. The certificate holder shall report the investigator's
35 findings to the Department.

36 The investigator also shall monitor as necessary:

- 37 • Once a year for the life of the project: The effectiveness of weed eradication and
38 control efforts throughout the mitigation site;
- 39 • Minimum of once a year for the life of the project and within one week of livestock
40 turn-out on adjacent property: The effectiveness of fencing in excluding livestock
41 from and allowing big game access to the mitigation site;

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- 1 • Minimum of annual monitoring for the life of the project: The effectiveness of the
2 new water source in providing water;
- 3 • Once a year for the life of the project: The effectiveness of enhancement actions for
4 the spring area in providing improved cover for wildlife and reducing erosion near the
5 spring source;
- 6 • Once a year for the life of the project: The overall condition of the mitigation site
7 (including, for example, the degree of erosion, the occurrence of weed concentrations
8 and changes in habitat quality); and
- 9 • Once a year for the life of the project: The general level of wildlife use, especially
10 grassland birds, within the mitigation site.

11 In addition, the inspector shall periodically categorize the entire mitigation site in terms
12 of ODFW habitat categories. The certificate holder shall propose a schedule for monitoring to
13 the Department and shall conduct monitoring as approved by the Department.

14 **3. Success Criteria**

15 *Permanent Impacts*

16 The enhancement goal for the permanent impact of the BCWF facility is met when 70
17 percent of the 11.93-acre reseeded area (about 8.4 acres) is Category 2 habitat, the remaining 30
18 percent is Category 3 habitat and undesirable plant species (weeds) and erosion are under control
19 and do not pose concern. If more than 8.4 acres of the reseeded area has been improved to
20 Category 2 quality, those additional acres may be “credited” toward mitigation for other impacts
21 upon Department approval.

22 *Displacement Effects*

23 Within the remainder of the mitigation area, consisting of 105.07 acres (117 acres less the
24 11.93 acres needed to mitigate for permanent impacts), the certificate holder shall provide
25 mitigation for displacement effects. The enhancement goal for the displacement effects is met
26 when:

- 27 • The habitat quality within at least 33 acres has been improved from Category 4 to
28 Category 3 habitat or better and at least 23 acres (70 percent) of this improved area
29 has the characteristics of established grassland and shrub-steppe plant communities.
- 30 • The condition of the rest of the land within the mitigation area does not pose a threat
31 to maintaining habitat quality of the improved area.

32 *Mitigation Banking*

33 Within the remainder of the mitigation area, consisting of 72.07 acres (117 acres less
34 44.93 acres needed to mitigate for permanent impacts and displacement effects), the acres that
35 the certificate holder improves from Category 4 to Category 3 habitat or better may be “credited”
36 toward mitigation for other impacts, as outlined in the Wildlife Monitoring and Mitigation Plan,
37 upon Department approval. To use any of the improved acres for mitigation, at least 70 percent
38 of the area used must have the characteristics of established grassland and shrub-steppe plant
39 communities.

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1 Specific Success Criteria

2 Specific success criteria are as follows:

3 **A. Reseeded Areas:** A reseeded area is successfully enhanced when total canopy cover
4 of all vegetation exceeds 30 percent and at least 25 percent of the ground surface is
5 covered by desirable plant species. Desirable plant species are native species or
6 desirable non-native species in the approved mitigation seed mix. After the above
7 success criteria have been met (predominantly desirable vegetation has been
8 established), the investigator shall verify, during subsequent visits, that the site
9 continues to meet the success criteria for habitat enhancement. In addition, the
10 investigator, in consultation with ODFW, shall evaluate the percentage of the
11 reseeded site that has been enhanced to Category 2 and Category 3 quality.

12 If all or part of the habitat within the reseeded area falls below the enhancement
13 success criteria levels, the investigator shall recommend corrective measures. The
14 Department may require reseeding or other corrective measures in those areas that do
15 not meet the success criteria.

16 **B. Weed control:** Weed control is successful when weed species are eliminated or
17 reduced to a level (based on considerations such as number, size and health of plants,
18 and percent ground cover) that does not interfere with the goals of the mitigation
19 plan. To meet success criteria, reseeded with seed approved by the Department may
20 be necessary.

21 **C. Fencing:** Fencing is successful when the Department deems that fencing has been
22 properly constructed according to ODFW specifications and continues to be effective
23 at excluding livestock from entering the mitigation site. This criterion includes
24 existing fencing.

25 **D. New Water Source:** The new water source is successful when the Department deems
26 that the water source has been properly constructed according to ODFW
27 specifications and continues to provide a reasonably reliable source of water for
28 wildlife.

29 **E. Spring Area Enhancement:** Enhancement of the spring area is successful when
30 appropriate native species of woody shrubs are planted, continue to grow, and provide
31 cover for wildlife.

32 **4. Corrective Measures**

33 If mitigation and enhancement actions fail to meet the success criteria, the investigator
34 shall recommend corrective measures for Department approval. The Department may require
35 reseeded or other corrective measures for those areas and for those actions that do not meet the
36 success criteria.

37 **5. Success Criteria Rationale**

38 The direct ("footprint") habitat impact of the BCWF is about 12 acres (11.93 acres). The
39 proportion of the impact is about 70 percent Category 3 habitat and about 30 percent Category 4
40 habitat. To mitigate for this habitat loss requires the improvement of about 12 acres of Category
41 4 grassland within the mitigation area so that 70 percent becomes Category 2 grassland and 30

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1 percent becomes Category 3 grassland. In addition, successful mitigation requires the protection
2 of the improved habitat for the life of the facility

3 The calculated potential grassland bird displacement impact is estimated to be about 33
4 acres. The proportion of the impact is about 70 percent Category 3 habitat (about 23 acres) and
5 about 30 percent Category 4 habitat (about 10 acres). To mitigate for the Category 3 component
6 of this habitat impact requires enhancing about 23 acres of current Category 4 habitat to
7 Category 3 grassland habitat. To mitigate for the Category 4 component requires enhancing
8 about 10 acres from Category 4 to Category 3 (this area need not be grassland habitat).

9 The total size of the mitigation area is 117 acres. Mitigation for the footprint impact
10 requires about 12 acres, which leaves about 105 acres in the habitat mitigation site. Mitigation
11 for the displacement impact requires about 33 acres, which leaves about 72 acres beyond the
12 minimum land area needed to achieve successful mitigation for the impacts described in this
13 plan. This 72 acres may be used for additional mitigation in the future, if the success criteria
14 described above in Section 3 are met.

15 **X. Amendment of the Plan**

16 This Habitat Mitigation Plan may be amended from time to time by agreement of the
17 certificate holder and the Oregon Energy Facility Siting Council ("Council"). Such amendments
18 may be made without amendment of the site certificate. The Council authorizes the Department
19 to agree to amendments to this plan. The Department shall notify the Council of all amendments,
20 and the Council retains the authority to approve, reject or modify any amendment of this plan
21 agreed to by the Department.