

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

In the Matter of the Request for Amendment #1 of
the Site Certificate for the Klondike III Wind Project

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**FINAL ORDER ON
AMENDMENT #1**

November 3, 2006

KLONDIKE III WIND PROJECT:
FINAL ORDER ON AMENDMENT #1

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LIST OF ABBREVIATIONS

BPA	Bonneville Power Administration
Council	Energy Facility Siting Council
CRP	Conservation Reserve Program
Department	Oregon Department of Energy
dba	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.
DEQ	Oregon Department of Environmental Quality
kV	kilovolt or kilovolts
LCDC	Land Conservation and Development Commission
PPM	PPM Energy, Inc.
MW	megawatt or megawatts
O&M	Operations and maintenance
ODFW	Oregon Department of Fish and Wildlife
SCADA	supervisory, control and data acquisition
SCCP	Sherman County Comprehensive Plan
SCZO	Sherman County Zoning Ordinance
SHPO	State Historic Preservation Office
USFWS	U.S. Fish and Wildlife Service
WMMP	Wildlife Monitoring and Mitigation Plan
WRD	Oregon Water Resources Department

**KLONDIKE III WIND PROJECT:
FINAL ORDER ON AMENDMENT #1**

I. INTRODUCTION

1 The Oregon Energy Facility Siting Council (Council) issues this final order in
2 accordance with ORS 469.405 and OAR 345-027-0070. This order addresses a request by the
3 certificate holder for amendment of the site certificate for the Klondike III Wind Project
4 (KWP). The certificate holder is Klondike Wind Power III LLC (KIII).

5 On June 30, 2006, the Council issued a site certificate for the KWP, a wind energy
6 facility with a peak generating capacity of approximately 272 megawatts (MW) to be built in
7 Sherman County, Oregon. The facility is not yet under construction.

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

II. PROCEDURAL HISTORY AND AMENDMENT PROCESS

10 On July 31, 2006, KIII submitted to the Oregon Department of Energy (Department) a
11 request to amend the site certificate.¹ On August 11, as required under OAR 345-027-0070,
12 the Department instructed the certificate holder to send copies of the request to the
13 appropriate officers, agencies and tribes listed in OAR 345-020-0040. The Department
14 requested agency comments by August 25. Also as required under the rule, the Department
15 sent notice of the amendment request to all persons on the Council's mailing list and to
16 persons on an updated list of property owners supplied by KIII. On August 10, 2006, the
17 Department notified KIII that the proposed order would be issued no later than October 9,
18 2006.

19 The Department received only one public comment on the amendment request by the
20 deadline of August 25. The comment was from the U.S. Fish and Wildlife Service (USFWS),
21 and it included specific recommendations for site certificate conditions to address potential
22 adverse effects of the KWP on avian and bat species.² The Department responded to the
23 USFWS letter on September 20, noting that many of the USFWS recommendations were
24 already addressed by conditions in the site certificate and enclosing a detailed response letter
25 from KIII.³ Department received agency responses from the Water Resources Department, the
26 Department of Geology and Mineral Industries, the Sherman County Planning Director, the
27 Department of Agriculture and the Office of the State Fire Marshal. The agencies did not raise
28 any issues of concern regarding the proposed amendment.

29 The Department issued a proposed order on October 2, 2006, recommending that the
30 Council approve the amendment request, subject to site certificate revisions. The Department
31 issued notice of the proposed order in accordance with OAR 345-027-0070 specifying a

¹ "First Request for Amendment to the Klondike III Wind Project," referred to herein as Request for Amendment #1.

² Letter from Nancy Gilbert, Field Supervisor, U.S. Fish and Wildlife Service, August 25, 2006.

³ Letter from John White, Oregon Department of Energy, September 20, 2006, (enclosing letter from Andrew Linehan, PPM Energy, September 5, 2006).

1 deadline for public comments and requests for a contested case proceeding. No adverse
2 comments or contested case requests were received by the deadline of November 2, 2006.

3 The Council considered the amendment request at a meeting on November 3, 2006,
4 and voted to approve the amendment request subject to the revisions recommended by the
5 Department.

III. DESCRIPTION OF THE PROPOSED AMENDMENT

6 KIII requests an amendment of the site certificate that, if approved, would:

- 7 1. Authorize the use of larger turbines.
- 8 2. Increase the authorized peak generating capacity of the facility from 272.25
9 megawatts to approximately 285 megawatts.
- 10 3. Allow construction of 34.5-kV collector lines outside of previously-approved
11 areas, allow up to 12 miles of aboveground 34.5-kV collector lines and eliminate
12 the previously-approved 230-kV transmission line along Klondike Lane.
- 13 4. Eliminate the previously-approved substation near Webfoot.
- 14 5. Allow construction of approximately 3 miles of access road segments outside of
15 previously-approved areas.
- 16 6. Give the certificate holder the option of locating the Operations and Maintenance
17 (O&M) building on a 3-acre site south of Klondike Lane or on the previously-
18 approved 4-acre site.
- 19 7. Change the location of all three meteorological (met) towers.
- 20 8. Allow minor widening of turbine micro-siting corridors.
- 21 9. Allow temporary disturbance outside of previously-approved areas.

1. Amendment Procedure

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

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

34 Because the proposed amendment would authorize construction outside of the site
35 boundary previously approved by the Council, construction could have adverse impacts that

1 the Council did not evaluate and address in the Final Order on the Application. Such impacts
2 could affect the resources protected by standards in Divisions 22 and 24 and could affect
3 geographic areas or human, animal or plant populations. The proposed amendment would
4 impair the certificate holder's ability to comply with current site certificate conditions and
5 could require new conditions or changes to current conditions. For these reasons, amendment
6 of the site certificate is needed to allow construction and operation of the KWP as proposed in
7 the amendment request.

8 In addition, an amendment is needed under Condition 38 of the site certificate:

9 *(38) Notwithstanding OAR 345-027-0050(2), an amendment of the site certificate is*
10 *required if the proposed change would increase the electrical generation*
11 *capacity of the facility and would increase the number of wind turbines or the*
12 *dimensions of existing wind turbines.*

13 The proposed change would increase the electrical generation capacity of the facility
14 and would increase the dimensions of existing (approved) wind turbines.

15 The proposed amendment would enlarge the site of the KWP facility and would make
16 other changes to the construction and operation of the facility allowed under the site
17 certificate. For those areas of where the site boundary would be enlarged, the Council must
18 consider whether the facility complies with all Council standards (OAR 345-027-0070(9)(a)).
19 For the other changes, the Council must consider the effects of the amendment on any finding
20 required by Council standards (OAR 345-027-0070(9)(c)).

2. Amendments to the Site Certificate as Proposed by KIII

21 In its request for Amendment #1, KIII proposed the following amendments to the site
22 certificate. Proposed additions are double-underlined and proposed deletions have a
23 strikethrough. The Department recommended revisions to the site certificate that incorporate
24 the substance of these amendments but that included additional language consistent with
25 KIII's request. The Department's recommended revisions are discussed in Section VII.1.

26 *Page 2, lines 18-24:*

27 The energy facility is an electric power generating plant with an average electric generating
28 capacity of approximately ~~91~~94.33 megawatts and a peak generating capacity of not more than
29 ~~272.25~~283 megawatts that produces power from wind energy. The facility consists of not
30 more than 165 wind turbines, each with a peak generating capacity of not more than ~~1.65~~2.4
31 megawatts. Turbines are mounted on tubular steel towers. The turbine towers are about 265
32 feet tall at the turbine hub and have an overall height of about ~~400~~413 feet including the radius
33 swept by the turbine blades. The energy facility is described further in the Final Order on the
34 Application.

35 *Page 2, lines 35-37, and page 3, lines 1-3:*

36 A power collection system operating at 34.5 kilovolts (kV) transports power from each turbine
37 to a collector substation. Most of the collection system is in underground segments but may
38 include aboveground segments, not exceeding ~~5.5~~5.12 miles in combined length, mounted on
39 monopole support structures. Power from the eastern section of the facility is transmitted to a
40 substation near Schoolhouse on an aboveground power line operating at 230-kV
41 approximately 3.5 miles in length, supported on wood or steel poles.

1 *Page 10, lines 12-14:*

2 (28) The certificate holder shall construct a facility substantially as described in the site
3 certificate and may select ~~one of two turbine types: the GE 1.5 megawatt wind turbine or~~
4 ~~the Vestas V82 1.65 megawatt wind turbine~~any turbine type such that the hub height
5 does not exceed 80 meters; the rotor diameter does not exceed 92.5 meters; overall
6 height, including blades, does not exceed 126 meters; the peak generating capacity does
7 not exceed 2.4 megawatts; the noise generated by the turbine does not exceed 110 dB;
8 and the turbine type otherwise meets the conditions set forth in the site certificate.

9 *Page 10, lines 22-37:*

10 (31) Before beginning construction and after considering all micrositing factors, the certificate
11 holder shall provide to the Department a detailed map of the proposed facility, showing
12 the final locations where facility components are proposed to be built in relation to the
13 300-foot and 900-foot corridors shown on Figures P-1 through P-6 of the first request to
14 amend the site certificate application ~~(as revised March 1~~ dated July 28, 2006). In
15 accordance with Condition (2), the certificate holder must submit a legal description of
16 the site to the Department. For the purposes of this site certificate, the term “legal
17 description” means a description of location by reference to a map and geographic data
18 that clearly and specifically identifies the physical location of all parts of the facility.
19 Notwithstanding OAR 345-027-0020(2), for the purposes of this site certificate,
20 construction of parts of a wind facility within micrositing corridors is comparable to
21 construction of pipelines or transmission lines within Council-approved corridors as
22 described in OAR 345-027-0023(6). Before beginning operation of the facility, the
23 certificate holder shall submit to the Department a legal description for those parts of the
24 facility constructed within micrositing corridors. The final site of the facility includes the
25 final turbine site corridors and other facility components as described in the final order
26 on the first request to amend site certificate application and in this site certificate.

27 *Page 13, lines 18-29:*

28 (48) Before beginning construction, the certificate holder shall provide to the Department a
29 map showing the final design locations of all components of the facility and areas that
30 would be temporarily disturbed during construction and also showing the areas that
31 Archaeological Investigations Northwest, Inc. (AINW) surveyed in 2005 and 2006, as
32 described in the site certificate application and the first request to amend the site
33 certificate. The certificate holder shall hire qualified personnel to conduct field
34 investigation of all areas of permanent or temporary disturbance that AINW did not
35 previously survey and shall provide a written report of the field investigation to the
36 Department. If any significant historic, cultural or archaeological resources are found
37 during the field investigation, the certificate holder shall ensure that construction and
38 operation of the facility will have no impact on the resources. The certificate holder shall
39 instruct all construction personnel to avoid the areas where the resources were found and
40 shall implement other appropriate measures to protect the resources.

41 *Page 17, lines 39-42, and page 18, lines 1-4:*

42 (84) The certificate holder shall install the 34.5-kV collector system underground to the extent
43 practical. Where geotechnical conditions or other engineering considerations require, the
44 certificate holder may install segments of the collector system aboveground in developed
45 or agricultural areas that are Category 6 habitat, but the total length of aboveground
46 segments must not exceed 5.512 miles. The certificate holder shall construct

1 aboveground segments of the collector system using single or double circuit monopole
2 design as described in the site certificate application and shall not locate any
3 aboveground segments within 200 feet of any existing residence.

4 *Page 19, lines 5-23:*

5 (92) The certificate holder may construct turbines and other facility components within the
6 900-foot corridors shown on Figures P-1 through P-6 of the site certificate application
7 (as revised March 1, 2006, and as further revised as part of the first request to amend the
8 site certificate, dated July 28, 2006), subject to the following requirements addressing
9 potential habitat impact:

10 (a) The certificate holder shall not construct any facility components within areas of
11 Category 1 habitat and shall avoid temporary disturbance of Category 1 habitat.

12 (b) The certificate holder shall design and construct facility components that are the
13 minimum size needed for safe operation of the energy facility.

14 (c) To the extent possible, the certificate holder shall construct facility components in
15 the locations shown on Figure C-2A and C-2B submitted with the first request to amend
16 of the site certificate application.

17 (d) If the certificate holder must change the layout of facility components from what is
18 shown on Figure C-2A and C-2B due to micrositing considerations, the certificate holder
19 shall, to the extent possible, construct facility components within the 300-foot corridors
20 shown on Figures P-1 through P-6 of the site certificate application (as revised March 1,
21 2006, and as further revised as part of the first request to amend the site certificate, dated
22 July 28, 2006).

23 (e) The certificate holder may construct facility components outside the 300-foot
24 corridors if necessary due to micrositing considerations, except that the certificate holder
25 shall not construct any facility components outside the 900-foot corridors shown on
26 Figures P-1 through P-6 of the site certificate application (as revised March 1, 2006, and
27 as further revised as part of the first request to amend the site certificate, dated July 28,
28 2006) or cause any temporary disturbance outside those 900-foot corridors.

3. Description of the Facility as Authorized by Amendment #1

29 If the Council approves Amendment #1, the certificate holder would be authorized to
30 construct and operate the KWP facility as described in the Final Order on the Application,
31 except as modified by the changes described below.

Turbine Selection

32
33 In the Request for Amendment #1, KIII has proposed to use larger turbines on some,
34 but not all, of the previously-approved turbine strings. The amendment would not add new
35 turbine strings, and the larger turbines would be located within the previously-approved 900-
36 foot-wide micrositing corridors. Figure C-3A of the amendment request identifies the turbine
37 strings where the certificate holder proposes to use larger turbines.⁴ Figure C-3A is
38 incorporated herein by this reference. Table 1 below shows the previously-approved
39 micrositing corridor centerlines with the “old” turbine string letter-designations (as shown on
40 Table 1 of the Final Order on the Application) and the “new” turbine string letter-designations
41 (as shown on Figure C-3A). In this order, turbine strings will be identified by the new letter-
42 designations. The turbine location numbers shown on Table 1 match the numbering scheme
43 on the Turbine Location Map, which was included in the site certificate application as

⁴ Figure C-3A as revised (transmittal from Dana Siegfried, September 14, 2006).

- 1 Appendix C-3. These turbine locations are the endpoints that define the centerlines of the
 2 previously-approved micrositing corridors.

Table 1: Micrositing Corridors for Turbine Strings

New String	Old String	Turbine Location	Latitude	Longitude	
B	A	Wpt1	45.56143104000	-120.66263222000	
		Wpt4	45.55657671000	-120.66253187000	
	B	Wpt5	45.55399210000	-120.66253144000	
		Wpt10	45.54668547000	-120.66233485000	
	C	C	Wpt11	45.54475534000	-120.65828190000
			Wpt17	45.53569225000	-120.65793936000
C	D	Wpt18	45.55153273000	-120.63639962000	
		Wpt25	45.54154988000	-120.63605834000	
D	E	Wpt26	45.56082735000	-120.62164462000	
		Wpt30	45.55487207000	-120.62164402000	
	F	Wpt31	45.55246254000	-120.61348375000	
		Wpt37	45.54340912000	-120.61299560000	
E	G	Wpt38	45.54166556000	-120.60473603000	
		Wpt40	45.53863962000	-120.60468682000	
F	H	Wpt50	45.61811216000	-120.58855202000	
		Wpt53	45.61346370000	-120.58845450000	
	I	Wpt54	45.62586049000	-120.58014585000	
		Wpt57	45.62162465000	-120.58004752000	
G	J	Wpt41	45.55442228000	-120.57072676000	
		Wpt43	45.55125879000	-120.57072605000	
	K	Wpt44	45.54888661000	-120.56593824000	
		Wpt49	45.54170001000	-120.56583954000	
J	L	Wpt58	45.62599850000	-120.55320828000	
		Wpt71	45.60688553000	-120.55306190000	
H	M	Wpt72	45.60407109000	-120.55829426000	
		Wpt75	45.59977288000	-120.55819622000	
K	N	Wpt163	45.58210000000	-120.55280000000	
		Wpt165	45.57781666000	-120.55280000000	
L	O	Wpt85	45.60403267000	-120.53060975000	
		Wpt94	45.59109475000	-120.53060814000	
M	P	Wpt136	45.58262994000	-120.52971039000	
		Wpt149	45.56384286000	-120.52936518000	
N	Q	Wpt150	45.56167545000	-120.52340252000	
		Wpt156	45.55255824000	-120.52325456000	
P	R	Wpt76	45.61862522000	-120.51853089000	
		Wpt84	45.60695245000	-120.51818634000	
R	S	Wpt95	45.60224306000	-120.51261574000	
		Wpt102	45.59192026000	-120.51256887000	
S	T	Wpt126	45.58940740000	-120.50693363000	
		Wpt129	45.58479718000	-120.50693322000	
	U	Wpt130	45.58256088000	-120.50688415000	
		Wpt135	45.57526711000	-120.50673689000	
U	V	Wpt157	45.56580402000	-120.50620288000	
		Wpt162	45.55861344000	-120.50610626000	
V	W	Wpt103	45.60420455000	-120.48533296000	
		Wpt116	45.58496973000	-120.48513612000	
W	X	Wpt117	45.58184026000	-120.48024932000	
		Wpt118	45.57998215000	-120.48020049000	
X	Y	Wpt119	45.58229149000	-120.46256500000	
		Wpt125	45.57388984000	-120.46261412000	

- 3 Under the proposed amendment, the certificate holder would have the option to
 4 construct larger turbines on strings K, L, M, N, R, S, U, V, W and X. On these strings, the

1 certificate holder would be allowed to select any turbine type up to 2.4 MW in peak
2 generating capacity with a turbine hub height of not more than 80 meters and rotor diameter
3 of not more than 92.5 meters and with a maximum sound power level of not more than 107
4 dBA. At a single proposed turbine location, identified as K-02 on Figure C-3A, turbine
5 selection would be subject to the same restrictions except that a maximum sound power level
6 of not more than 110 dBA would be allowed.⁵

7 The amendment would allow the use of either the GE 1.5-megawatt or the Vestas V82
8 1.65-megawatt wind turbine on any of the turbine strings. In the Final Order on the
9 Application, the Council approved the use of either of these two turbine types but required the
10 certificate holder to select only one turbine type. This restriction was based on the site
11 certificate application, which requested approval of the two turbine types as “alternatives.”
12 Both turbine types were analyzed in the Final Order on the Application, and the Council’s
13 findings assumed the “worst case” choice. In the amendment request, KIII has requested the
14 flexibility to use a combination of the GE and Vestas turbines. Because the Council has
15 already made findings on the potential impacts of both turbine types, the Council finds that
16 the site certificate should allow the certificate holder the flexibility to use the two turbine
17 types in combination.

18 The Council modifies Condition 28 to include the restrictions on turbine selection
19 described above. The revised language is shown in Revision 8 below at page 56.

20 Number of Turbines and Overall Generating Capacity

21 Under the proposed amendment, the total number of turbines authorized for
22 construction at the KWP site would not change. The certificate holder would be authorized to
23 construct a wind energy facility that includes not more than 165 turbines. As described in the
24 Request for Amendment #1, the maximum number of larger turbines would be 61. If the
25 certificate holder designs the project with the maximum number of larger turbines and selects
26 1.65-MW turbines for the remaining turbine strings, the maximum number of small turbines
27 would be 84. This configuration would produce the maximum overall generating capacity at
28 the facility. Under this configuration, the total number of turbines at the site would be 145 and
29 the overall peak generating capacity would be 285 MW.⁶ The facility’s average electric
30 generating capacity would increase from 91 MW to 95 MW.

31 Power Collection System

32 The current site certificate describes a power collection system consisting of
33 approximately 38 miles of 34.5-kV collector line. Approximately 18.3 miles of collector lines
34 would be installed within existing county road right-of way, and an additional 19.7 miles of
35 collector lines would be installed within the leasehold lands of the project. The total length of
36 aboveground segments would not exceed 5.5 miles. In addition, a 230-kV transmission line
37 approximately 3.5 miles long would connect a proposed project substation near Webfoot at
38 the previously-approved Operations and Maintenance (O&M) building site to a project
39 substation near the existing Klondike I and II “Schoolhouse” transmission facilities.

⁵ E-mail from Jesse Gronner, August 8, 2006.

⁶ The maximum generating capacity of 285 MW assumes that a 2.4-MW turbine with a maximum sound power level of 107 dBA becomes available. If the currently available 107-dBA, 2.3-MW turbines are used (except for a single 2.4-MW turbine at K-02), the maximum overall generating capacity of the KWP would be 279 MW.

1 Under the proposed amendment, the overall length of the power collection system
 2 would increase from 38 miles to approximately 59 miles of 34.5-kV collector line.⁷ Nearly all
 3 of the collector lines would be installed outside of county road right-of way within the
 4 leasehold lands of the project. The total length of aboveground segments would not exceed 12
 5 miles. The 230-kV transmission line would not be built.⁸

6 Under the proposed amendment, the certificate holder would have the flexibility to
 7 locate aboveground and underground collector lines within the new micro-siting corridors
 8 defined in Table 2 below. Corridor locations are shown on Figure C-2A of the Request for
 9 Amendment #1, incorporated herein by this reference.⁹

Table 2: Micro-siting Corridors for Roads, Collector Lines and Crane Paths

#	Description	Width (feet)	End Point (centerline of corridor)	Latitude	Longitude
1	Crane path from B to C	150	w	45.5512069133	-120.660631620
			e	45.5511665407	-120.638201067
2	Collector and road from B5-10 to B11-17	300	n	45.5454346473	-120.661736691
			m	45.5450130550	-120.661322686
			s	45.5449989249	-120.660117702
3	Collector from B to C	200	w	45.5549683513	-120.661244849
			e	45.5549100816	-120.642267709
4	Collector and crane path from C to D (immediately north of and adjacent to Smith Lane right-of-way)	200	w	45.5549273150	-120.641680303
			e	45.5549613110	-120.623497502
5	Road from Smith Lane to C	200	n	45.5549100816	-120.642267709
			s	45.5522334429	-120.638005200
6	Collector from C to e-w corridor to north	200	n	45.5547998199	-120.637920317
			s	45.5522350455	-120.638003787
7	Collectors from C to Smith Lane	200	n	45.5549273150	-120.641680303
			s	45.5539907770	-120.638035839
8	Collector from e-w corridor to D1-D5	200	s	45.5551600234	-120.625173650
			n	45.5621004505	-120.624917345
			e	45.5621301265	-120.621624100
9	Collector and road from D1-5 to D7-13	300	w	45.5543402771	-120.619918385
			e	45.5526091104	-120.615334590
10	Collector from D1-5 to Sandon Rd	200	w	45.5621301395	-120.621611884
			e	45.5618238859	-120.602681502
11	Collector from existing substation to E	200	n	45.5839940886	-120.602654014
			m	45.5437234589	-120.602643544
			s	45.5428948141	-120.604043506
12	Collector from G1-2 to Sandon Rd	200	e	45.5551104974	-120.572343460
			m	45.5617481516	-120.581832866
			w	45.5618238859	-120.602681502
13	Collector and road from G1-2 to G3-9	400	n	45.5510484319	-120.568884045

⁷ E-mail from Dana Siegfried, September 15, 2006.

⁸ E-mail from Jesse Gronner, August 10, 2006.

⁹ Figure C-2A as revised (transmittal from Dana Siegfried, August 24, 2006).

			s	45.5500542196	-120.566833675
14	Crane path from D7-13 to E1-3	150	n	45.5458574862	-120.611474146
			s	45.5421260214	-120.606498973
15	Collectors from existing substation to K	200	w	45.5845527036	-120.601899780
			e	45.5843294537	-120.551973702
16	Collectors from K to M	200	w	45.5843294537	-120.551973702
			e	45.5839326615	-120.529773027
17	Collectors from M to S	200	w	45.5839326615	-120.529773027
			mw	45.5840844498	-120.522677470
			me	45.5831091991	-120.520554743
			e	45.5833672329	-120.508390014
18	Collector from S to W	200	w	45.5831687182	-120.505205897
			e	45.5831429977	-120.480257542
19	Collector from W to X	200	w	45.5831430020	-120.480282450
			e	45.5831350613	-120.464029352
20	Road from M8 to Gosson Ln	200	e	45.5625405275	-120.529250038
			m	45.5620265268	-120.533378244
			w	45.5620091635	-120.541296399
21	Road, crane path and collector from M to N	350	w	45.5625401229	-120.529315736
			e	45.5624428691	-120.524947540
22	Road, crane path and collector from N to U	350	w	45.5624299939	-120.521844343
			e	45.5623806625	-120.507906810
23	Crane path from K to M	150	w	45.5776210727	-120.550955110
			e	45.5759120235	-120.531212606
24	Collector from substation to Dehler Rd	200	s	45.5845527036	-120.601899780
			m	45.5987166329	-120.592299723
			n	45.6050218215	-120.589753622
25	Collector and road from Klondike Rd to H	300	s	45.5848792254	-120.586959084
			n	45.5992811876	-120.559944530
26	Collector from Klondike Rd to L	200	s	45.5848479593	-120.538450912
			m	45.5879351007	-120.538383214
			n	45.5906750845	-120.532390054
27	Collector from Klondike Rd to Mid-V	200	e	45.5911444910	-120.487068458
			w	45.5909647945	-120.500106966
			s	45.5835435683	-120.500272545
28	Collectors and crane path R to S	350	n	45.5908705905	-120.511405023
			s	45.5888700554	-120.508657162
29	Crane path L to R	150	w	45.5987365869	-120.529086348
			e	45.5988191206	-120.514198619
30	Crane path R to V	150	w	45.5978824464	-120.510664203
			e	45.5975107988	-120.487124553
31	Collectors Dehler Rd east to H	200	w	45.6050218215	-120.589753622
			e	45.6053572330	-120.558673119
32	Collectors H to J	300	w	45.6053661504	-120.558578891
			e	45.6055827983	-120.553060589
33	Crane path H to J	150	w	45.6031832950	-120.556513162
			m	45.6030958003	-120.551338747

			e	45.6052080216	-120.551340659
34	Collectors and crane path J to L	350	w	45.6052080216	-120.551340659
			e	45.6053340703	-120.530764193
35	Collectors and crane path L to P	350	w	45.6053338720	-120.530772718
			e	45.6056497052	-120.518246680
36	Crane path from P to R	150	w	45.6050090446	-120.518246474
			e	45.6048843156	-120.511401391
37	Collector from Dehler Rd to F1-4	200	s	45.6052260780	-120.588966326
			n	45.6121874209	-120.588912140
38	Collector from Dehler Rd to F5-8	200	s	45.6052186812	-120.582533609
			n	45.6215957484	-120.581904008
39	Crane path from F1-4 to J	150	w	45.6131642198	-120.586629575
			e	45.6130107232	-120.554964860
40	Crane path from D to G	150	w	45.5528003316	-120.611672750
			e	45.5553084456	-120.573603276
41	Collector from main corridor to U	200	w	45.5620142061	-120.509549019
			e	45.5611995406	-120.507992932
42	Collector and road from substation to met tower	100	s	45.5858016981	-120.601504013
			n	45.5872631305	-120.601536794
43	Collector from M to main corridor M to S	200	w	45.5829914697	-120.527906271
			e	45.5831091991	-120.520554743
44	Crane path V to W	150	w	45.5843149815	-120.483307314
			m	45.5842226397	-120.480341585
			s	45.5835642053	-120.480298200
45	Collector from V to W	200	w	45.5841312311	-120.483285561
			m	45.5839319260	-120.481671908
			s	45.5835184322	-120.481279520
46	Collector and road from R to Dehler Rd	350	s	45.6032777946	-120.511425230
			n	45.6048843156	-120.511401391
47	Data line and road from String L to met tower	200	w	45.5974394877	-120.534746342
			e	45.5972428952	-120.532407235

1 **Substations**

2 Under the proposed amendment, only one project substation would be built. It would
3 be located near the existing Klondike I and II "Schoolhouse" facilities on Klondike Lane. The
4 previously-approved substation near Webfoot would not be built.

5 **Meteorological Towers**

6 As described in the current site certificate, the KWP includes three permanent
7 meteorological (met) towers. Under the proposed amendment, three met towers would be
8 built but in different locations than previously approved. The met towers would be located
9 near the substation and near turbine strings L and K as shown on Figure P-4 in the Request for
10 Amendment #1. The met towers would be non-guyed steel towers approximately 80 meters in
11 height with a triangular concrete base approximately 25 feet on each side.

12 **Operations and Maintenance Building**

13 The proposed amendment would allow the certificate holder to have the option to
14 construct the O&M building at the 4-acre site previously approved by the Council or at a new

1 3-acre site south of the Webfoot intersection. If the alternate 3-acre site is selected, on-site
2 power would be supplied by Wasco Electric Cooperative from an existing distribution line
3 running along the north side of Klondike Lane. No new poles would be needed.¹⁰

4 Access Roads

5 As described in the current site certificate, the certificate holder would construct
6 approximately 19 miles of roads to provide access to the turbine strings. Under the proposed
7 amendment, the certificate holder would construct approximately 22 miles of access roads.
8 The roads would be 20 feet wide and surfaced with crushed gravel. The certificate holder
9 would have flexibility to locate access roads anywhere within the micro-siting corridors
10 defined in Table 2 and the turbine micro-siting corridors defined in Table 1, subject to site
11 certificate conditions. The general location of access roads would be as shown in Figures P-1
12 through P-6 of the Request for Amendment #1.¹¹

13 Temporary Disturbance Areas

14 Under the proposed amendment, the total area of potential temporary disturbance
15 during construction would be approximately 223 acres, compared to approximately 97 acres
16 described in the Final Order on the Application. The locations of temporary disturbance areas
17 are shown on Figures P-1 through P-6 of the Request for Amendment #1. The increased area
18 of temporary disturbance (outside of the previously-approved site boundary) is due to
19 additional laydown and staging areas (approximately 68 acres), construction area for collector
20 lines (approximately 17 acres) and crane paths (approximately 42 acres).

21 Under the proposed amendment, portions of turbine micro-siting corridors C, D, L, M,
22 R, S and V are widened to accommodate a radius of potential temporary impact at each
23 turbine location or to accommodate potential temporary disturbance due to installation of
24 underground collector lines near turbine strings. The widened portions are described as
25 follows:¹²

- 26 • Corridor C is widened by about 100 feet wide and 500 feet long to the west of
27 C-02, -03 and -04.
- 28 • Corridor D is widened by about 100 feet wide and 400 feet long to the west of
29 D-13.
- 30 • Corridor L is widened by about 300 feet wide and 300 feet long to the west of
31 L-06 and L-07.
- 32 • Corridor M is widened by about 100 feet wide and 1,700 feet long to the west
33 of M-06, -07 and -08.
- 34 • Corridor R is widened by about 50 feet wide and 2,600 feet long to the east of
35 R-04, -05, -06 and -07
- 36 • Corridor S is widened by about 140 feet wide and 1,900 feet long to the west
37 of S-01, -02 and -03.
- 38 • Corridor V is widened by about 120 feet wide and 1,700 feet long to the west
39 of V-07, -08 and -09; about 30 feet wide and about 150 feet long to the west of
40 V-10; and about 110 feet wide and about 270 feet long to the west of V-11.

¹⁰ E-mail from Dana Siegfried, September 15, 2006.

¹¹ Figures P-1 through P-6 as revised (transmittal from Dana Siegfried, August 24, 2006).

¹² E-mail from Dana Siegfried, September 8 and 15, 2006.

1 Allowing temporary disturbance for crane paths would enable construction to proceed
2 more efficiently by reducing the distance that large construction cranes would have to travel
3 between turbine strings.¹³ Micrositing corridors for crane paths and collector lines are
4 described in Table 2 above. The certificate holder would locate collector lines and crane paths
5 on the centerlines of the proposed micrositing corridors unless that is not possible due to
6 terrain, bedrock or other landscape features. The actual width of temporary disturbance from
7 crane paths would be approximately 35 feet, and the actual width of trenching for
8 underground collector lines would be approximately 5 feet.¹⁴

9 Additional construction laydown areas would occupy approximately 68 acres outside
10 the previously-approved site boundary. The locations of these new laydown areas are shown
11 on Figures P-1 through P-6.¹⁵

The Site and Site Boundary

12 For the purpose of analysis of the proposed amendment, the “site boundary” is the
13 perimeter of the site of the proposed energy facility, its related or supporting facilities, all
14 temporary laydown and staging areas and all micrositing corridors for turbine strings, roads,
15 collector lines and crane paths.

16 As required under Conditions 2 and 31, before beginning construction of the facility,
17 the certificate holder would determine final locations of turbines, roads and collector lines and
18 submit a legal description of the facility site to the Department. The facility site includes all
19 land upon which the energy facility and its related or supporting facilities are located,
20 including site corridors for turbine strings. Turbine site corridors are corridors centered on the
21 turbine string centerlines defined by the final center-point locations of the turbine towers. The
22 Council finds that the width of turbine site corridors should be determined based on the rotor
23 diameter of the turbines located within the corridor and should equal rotor diameter plus 100
24 feet. Accordingly, for turbines having an 82-meter rotor diameter, the turbine site corridor
25 width would be 369 feet, and for turbines having a rotor diameter of 92.5 meters, the turbine
26 site corridor width would be 403 feet.

27 In addition, the final site of the facility includes the following components:

- 28 • Meteorological towers, access roads and underground data lines – The site
29 includes the area within 30 feet of the tower locations and the centerline of access
30 roads and data lines.
- 31 • Collector transmission lines – The site includes the area within 30 feet of the
32 centerline of all underground and aboveground collector lines.
- 33 • Access roads – The site includes the area within 30 feet of the centerline of all
34 turbine string access roads.
- 35 • KWP substation near Schoolhouse – The site includes the four-acre substation
36 area.

¹³ E-mail from Jesse Gronner, August 8, 2006.

¹⁴ E-mail from Dana Siegfried, September 5, 2006.

¹⁵ Revised figures (transmittal from Dana Siegfried, September 13, 2006). Laydown areas that lie entirely or partly outside of the previously-approved site boundary are numbered 3, 8, 9, 10, 11, 16 and 18 and also include a 6-acre area adjacent to the previously-approved O&M building site.

- 1 • O&M Building – The site includes either the 4-acre site previously approved or the
2 3-acre alternative site described herein.

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

3 The Council must decide whether the amendment complies with the facility siting
4 standards adopted by the Council. In addition, the Council must impose conditions for the
5 protection of the public health and safety, for the time of commencement and completion of
6 construction, and to ensure compliance with the standards, statutes and rules addressed in the
7 project order. ORS 469.401(2).

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

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

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

1. General Standard of Review

OAR 345-022-0000

21 *(1) To issue a site certificate for a proposed facility or to amend a site certificate,*
22 *the Council shall determine that the preponderance of evidence on the record*
23 *supports the following conclusions:*
24

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

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

1 * * *

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

2. Standards about the Applicant

(a) Organizational Expertise

6 **OAR 345-022-0010**

7 *(1) To issue a site certificate, the Council must find that the applicant has the*
8 *organizational expertise to construct, operate and retire the proposed facility in*
9 *compliance with Council standards and conditions of the site certificate. To*
10 *conclude that the applicant has this expertise, the Council must find that the*
11 *applicant has demonstrated the ability to design, construct and operate the*
12 *proposed facility in compliance with site certificate conditions and in a manner*
13 *that protects public health and safety and has demonstrated the ability to restore*
14 *the site to a useful, non-hazardous condition. The Council may consider the*
15 *applicant's experience, the applicant's access to technical expertise and the*
16 *applicant's past performance in constructing, operating and retiring other*
17 *facilities, including, but not limited to, the number and severity of regulatory*
18 *citations issued to the applicant.*

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

23 *(3) If the applicant does not itself obtain a state or local government permit or*
24 *approval for which the Council would ordinarily determine compliance but*
25 *instead relies on a permit or approval issued to a third party, the Council, to issue*
26 *a site certificate, must find that the third party has, or has a reasonable likelihood*
27 *of obtaining, the necessary permit or approval, and that the applicant has, or has*
28 *a reasonable likelihood of entering into, a contractual or other arrangement with*
29 *the third party for access to the resource or service secured by that permit or*
30 *approval.*

31 *(4) If the applicant relies on a permit or approval issued to a third party and the*
32 *third party does not have the necessary permit or approval at the time the Council*
33 *issues the site certificate, the Council may issue the site certificate subject to the*
34 *condition that the certificate holder shall not commence construction or operation*
35 *as appropriate until the third party has obtained the necessary permit or approval*
36 *and the applicant has a contract or other arrangement for access to the resource*
37 *or service secured by that permit or approval.*

Findings of Fact

38 In the Final Order on the Application, the Council found that KIII has the
39 organizational, managerial and technical expertise to construct and operate the KWP. The

1 increase in generating capacity, the areas of enlargement of the facility site and the other
2 changes to the construction and operation of the facility that would be authorized by the
3 proposed amendment would not affect the Council's previous finding.

4 KIII is a wholly-owned subsidiary of PPM Energy, Inc. (PPM), and PPM would
5 provide the organizational, managerial and technical expertise to construct and operate the
6 proposed KWP. The amendment request described three personnel changes for the
7 development, construction and operation of the proposed energy facility.¹⁶ The Council finds
8 that PPM continues to have experience in power project engineering, design, development,
9 construction and operation. There has been no other change of circumstances or underlying
10 facts that affects the Council's findings under this standard.

Conclusions of Law

11 Based on the findings stated above, the Council concludes that KIII would meet the
12 Council's Organizational Expertise Standard if Amendment #1 were approved.

(b) Retirement and Financial Assurance

OAR 345-022-0050

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

14
15 *(1) The site, taking into account mitigation, can be restored adequately to a useful,*
16 *non-hazardous condition following permanent cessation of construction or*
17 *operation of the facility.*

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

Findings of Fact

A. Site Restoration

21 The Department analyzed the effect of the proposed changes on the cost of site
22 restoration. The following proposed changes to the facility could affect the cost of site
23 restoration:

- 24 • Use of larger turbines
- 25 • Increased length of aboveground 34.5-kV collector lines
- 26 • Larger area of permanent access roads
- 27 • Elimination of the proposed 230-kV transmission line
- 28 • Elimination of the Webfoot substation
- 29 • Additional area of temporary disturbance

30 Site restoration would be done as described in the Final Order on the Application.
31 Approval of Amendment #1 would not affect the Council's previous finding that the site can
32 be adequately restored to a useful, non-hazardous condition.

¹⁶ A listing of the key personnel changes is included in the Request for Amendment #1 and is incorporated herein by this reference (Request for Amendment #1, pages D-1 and D-2).

B. Estimated Cost of Site Restoration

1 To provide a fund that is adequate for the State of Oregon to pay site restoration costs
2 if the certificate holder fails to perform its obligation to restore the site under Condition 9 of
3 the site certificate, the Council assumes circumstances under which the restoration cost would
4 be greatest.

5 In the Final Order on the Application, the Council found that \$2.201 million (2005
6 dollars) was a reasonable estimate of the cost to restore the site to a useful, non-hazardous
7 condition. This amount was the Department's estimate based on conservative assumptions.

8 In the Request for Amendment #1, KIII concluded that the site restoration cost of the
9 facility as revised under the proposed amendment would be less than the site restoration cost
10 of the facility as currently authorized under the site certificate. Therefore, KIII proposed no
11 change in the financial assurance amount.

12 The Council finds that the use of larger turbines (up to 2.4-MW) that would be
13 allowed if Amendment #1 were approved is not likely to increase the net cost of turbine
14 removal. The maximum number of turbines would not exceed 165 under any combination of
15 allowed turbine types. Although larger turbines would be allowed, the use of larger turbines
16 would reduce the overall number of turbines that would be built. As the total number of
17 turbines is reduced, turbine removal costs would decline (due to reduction in the amount of
18 foundation concrete to be removed and the reduction in the number of turbines to be
19 dismantled). Also, each larger turbine would contribute a greater weight of scrap metal, which
20 would increase the total scrap value and reduce the net cost. Accordingly, in estimating the
21 site restoration cost, the Department assumed a configuration in which 165 turbines (each
22 having a generating capacity of 1.5 or 1.65 megawatts) would have to be removed from the
23 site. This is consistent with the Council's practice of assuming circumstances under which the
24 site restoration cost would be greatest.

25 The changes to the facility that would result from approval of Amendment #1 include
26 elimination of certain components from the facility that were approved by the Council under
27 the current site certificate. Components eliminated from the design include a 3.5-mile 230-kV
28 transmission line and one of two proposed substations. Because these components would not
29 be built if Amendment #1 were approved, the cost of removal of these components would be
30 subtracted from the previously-estimated site restoration cost.

31 Amendment #1 would add to the length of aboveground transmission lines and access
32 roads and result in additional site restoration costs. The amendment would allow up to 12
33 miles of aboveground 34.5-kV collector line, which is an increase of up to 6.5 miles of
34 aboveground transmission line and support structures to be removed during site restoration. In
35 addition, the amendment would allow construction of additional length of access roads,
36 occupying 7.1 acres of land, an increase of approximately three miles.

37 Approval of the amendment request would allow an increase in the amount of
38 temporary disturbance during construction due to the use of crane paths, the expansion of area
39 affected by installation of underground collector lines and the increased acreage of laydown
40 and staging areas. Altogether, the amendment would increase the temporary disturbance area
41 by approximately 126 acres, resulting in a total temporary disturbance area of 223 acres.
42 Council precedent is to assume that the same amount of temporary disturbance would occur

1 during site restoration as would occur during construction. The Council finds that an
2 exception to this general assumption is justified for area that is temporarily disturbed only for
3 the installation of underground transmission or communication cables that would be left in
4 place during site restoration. Condition 88 requires construction of the underground segments
5 of the 34.5-kV transmission line to be at least 36 inches below the surface. Fiber-optic
6 communication lines for the supervisory, control and data acquisition (SCADA) system could
7 also be left in place if they are installed at least 36 inches below grade. The Council modifies
8 Condition 43 to specify the depth of SCADA lines, as described in Revision 11. The area that
9 would be temporarily disturbed during construction of underground components that would
10 be left in place during site restoration amounts to approximately 27 acres.¹⁷ Accordingly, the
11 Department estimates that site restoration would temporarily disturb approximately 196 acres
12 of land. In addition, the Department's estimate of the unit cost for restoring areas of
13 temporary disturbance is significantly reduced from the unit cost shown in the Final Order on
14 the Application. The new unit cost is based on scarification and seeding, but, in contrast to the
15 unit cost shown in the Final Order on the Application, it does not include topsoil application,
16 because the areas of temporary disturbance would not be covered with gravel during site
17 restoration.

18 With these changes in the facility design, the Department calculated a revised site
19 restoration cost estimate as shown in Table 3.¹⁸

¹⁷ E-mail from Dana Siegfried, September 26, 2006.

¹⁸ Compare Table 3 above with Table 2 in the Final Order on the Application. In Table 3, the Department has added a line item for "General Costs." In Table 2 of the Final Order on the Application, these general costs were distributed proportionately to the unit costs. General costs are the sum of various fixed project costs as shown. By removing the general cost component, the unit cost amounts may be applied to alternative facility configurations. This facilitates adjustment of the site restoration cost based on the "as-built" configuration. In Table 3, the Department has adjusted unit costs to 2005 dollars where previous estimates were based on cost data from 2004.

Table 3: Cost Estimate for Site Restoration (2005 dollars)

Cost Estimate Component	Quantity	Unit Cost	Extension
<u>Turbines</u>			
Disconnect electrical and ready for disassembly (per turbine)	165	\$951	\$156,915
Remove turbine blades, hubs and nacelles (per turbine)	165	\$5,045	\$832,425
Remove turbine towers (per net ton of steel)	36,368	\$65	\$2,363,920
Remove and load pad transformers (per turbine)	165	\$2,182	\$360,030
Foundation and transformer pad removal, restoration and reseeding (per turbine)	165	\$1,877	\$309,705
<u>Met Towers</u>			
Dismantle and dispose of met towers (per tower)	3	\$7,072	\$21,216
<u>Substation and O&M Building</u>			
Dismantle and dispose of substation	1	\$132,237	\$132,237
Dismantle and dispose of O&M building	1	\$84,861	\$84,861
<u>Transmission Line</u>			
Removal of 34.5 kV aboveground transmission line (per mile)	12	\$3,073	\$36,876
Junction boxes - remove electrical to 4' below grade (each)	9	\$1,281	\$11,529
<u>Access Roads</u>			
Road removal, grading and seeding (per mile)	22	\$45,279	\$986,348
<u>Temporary Areas</u>			
Restore area disturbed during restoration work (per acre)	196	\$2,689	\$527,044
<u>General Costs</u>			
Permits, mobilization, engineering, overhead, utility disconnects			\$427,057
Gross Cost			\$6,250,163
Less scrap value of steel and other metals (per ton)	36,368	(\$149)	(\$5,418,832)
Subtotal			\$831,331
Performance Bond		1%	\$8,313
Administration and Project Management		10%	\$83,133
Future Developments Contingency		20%	\$166,266
Total Site Restoration Cost (rounded to nearest \$1,000)			\$1,089,000

C. Adjustment of the Financial Assurance Amount

1 The estimated site restoration cost, based on greatest-cost assumptions, would be less
2 than the financial assurance amount currently required under Condition 32 of the current site
3 certificate. Because the estimate is based on the assumption that 165 turbines would be built,
4 it may overestimate the restoration cost for the KWP under its final design configuration. The
5 Council amends Condition 32 to allow an adjustment of the financial assurance amount based
6 on applying the unit costs and general costs shown in Table 3 to the final design and
7 calculating the financial assurance amount as described in this order, subject to a minimum
8 financial assurance amount of \$500,000.¹⁹

9 The Council finds that the estimated gross cost of site restoration for the proposed
10 KWP, with the changes proposed under Amendment #1, would be \$6,250,163 (2005 dollars)

¹⁹ The Department has based the recommended minimum financial assurance amount on an amount necessary to cover the estimated General Costs shown in Table 3 plus the state's estimated administration and project management costs. The recommended minimum of \$500,000 applies to the KWP if Amendment #1 were approved and is not intended to apply to future amendments or different energy projects.

1 as shown in Table 3 or a lesser amount based on the final design configuration (“base gross
2 cost”). Condition 32 of the site certificate for the KWP requires adjustment of the gross cost
3 using the U.S. Gross Domestic Product Implicit Price Deflator, Chain-Weight, as published in
4 the Oregon Department of Administrative Services’ “Oregon Economic and Revenue
5 Forecast” (GDP Index). For the initial bond or letter of credit, the Council finds that the
6 financial assurance amount should be adjusted to the date of issuance of the bond or letter of
7 credit by using the annual GDP Index value for 2005 for the base gross cost and the GDP
8 Index value for calendar quarter in which the bond or letter of credit is issued for the present
9 value as of the date of the issuance.²⁰ In future years, the bond or letter of credit would be
10 adjusted annually on the anniversary of the date of initial issuance.

11 The Council finds that the estimated credit for scrap value of metals would be
12 \$5,418,832 (2005 dollars) as shown in Table 3 or a different amount based on the final design
13 configuration (“base scrap value”).²¹ Condition 32 requires annual adjustment of scrap value
14 using an index value derived from the Producer Price Index for carbon steel scrap reported by
15 the U.S. Department of Labor, Bureau of Labor Statistics. The Council finds there would be
16 no adjustment of the scrap value credit if the initial bond or letter of credit is issued in 2006.²²

17 The Council finds that the value of the financial assurance bond or letter of credit for
18 restoring the site of the proposed KWP would be \$1,089,000 (2005 dollars), subject to the
19 base cost and annual adjustments described above. The Council finds that, notwithstanding
20 the allowed adjustments, the minimum bond or letter of credit amount is \$500,000. The
21 Council amends Condition 32 as described in Revision 10 below at page 57.

D. Ability of the Applicant to Obtain a Bond or Letter of Credit

22 In the Final Order on the Site Certificate Application, the Council found that there was
23 a “reasonable likelihood” that the Royal Bank of Scotland would provide an annual letter of
24 credit for the KWP, based on a letter from the bank. The letter indicated that PPM Energy (the
25 parent company of KIII) had sufficient available credit with the bank to support a letter of
26 credit in the amount of \$2.5 million. The Council finds that, with the changes that would be
27 allowed under Amendment #1, it is reasonably likely that KIII can obtain a letter of credit in
28 an amount satisfactory to the Council.

²⁰ For example, assuming a letter of credit (LOC) is used and the initial date of issuance is November 1, 2006, the gross amount of \$6,250,163 in 2005 dollars would be adjusted to present value as of November 1, 2006, by multiplying the base amount by the ratio of the GDP Index value for the Fourth Quarter, 2006, to the GDP Index value for 2005: $(116.1/112.2) \times \$6,250,163 = \$6,467,414.66$.

²¹ The Department’s estimate of scrap value assumed the overall weight of recoverable metals for 165 turbines would be 36,368 net tons (U.S. tons), based on information supplied in the site certificate application and rounded to the nearest whole ton. The Department further assumed that the weight of recoverable metals per turbine for 1.5-MW GE turbines would not be significantly different than the weight for 1.65-MW Vestas turbines, based on the similarity of the applicant’s description of turbine hub-heights and rotor diameters for the two turbine types.

²² Condition 32 describes the adjustment factor as a ratio with the average monthly index value for the 12 months ending with December of the year preceding the year in which the adjustment is made as the numerator and the average monthly index value for the 12 months ending with December 2005 (277.2) as the denominator. If the adjustment is made in 2006, the resulting ratio equals 1.

Conclusions of Law

1 Based on the findings stated above, the Council concludes that KIII would meet the
2 Council's Retirement and Financial Assurance Standard if Amendment #1 were approved.

3. Standards about Impacts of Construction and Operation

(a) Land Use

OAR 345-022-0030

3
4 *(1) To issue a site certificate, the Council must find that the proposed facility*
5 *complies with the statewide planning goals adopted by the Land Conservation and*
6 *Development Commission.*

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

8 ***

9 *(b) The applicant elects to obtain a Council determination under ORS*
10 *469.504(1)(b) and the Council determines that:*

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

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

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

23 *(3) As used in this rule, the "applicable substantive criteria" are criteria from the*
24 *affected local government's acknowledged comprehensive plan and land use*
25 *ordinances that are required by the statewide planning goals and that are in effect*
26 *on the date the applicant submits the application. If the special advisory group*
27 *recommends applicable substantive criteria, as described under OAR 345-021-*
28 *0050, the Council shall apply them. If the special advisory group does not*
29 *recommend applicable substantive criteria, the Council shall decide either to make*
30 *its own determination of the applicable substantive criteria and apply them or to*
31 *evaluate the proposed facility against the statewide planning goals.*

32 *(4) The Council may find goal compliance for a proposed facility that does not*
33 *otherwise comply with one or more statewide planning goals by taking an*
34 *exception to the applicable goal. Notwithstanding the requirements of ORS*
35 *197.732, the statewide planning goal pertaining to the exception process or any*
36 *rules of the Land Conservation and Development Commission pertaining to the*
37 *exception process, the Council may take an exception to a goal if the Council*
38 *finds:*

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

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

7 (c) The following standards are met:

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

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

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

16 * * *

Findings of Fact

17 In the Final Order on the Application, the Council found the proposed KWP would
18 comply with the statewide planning goals based on a land use analysis under ORS
19 469.504(1)(b)(B). The Council found that the facility complied with the applicable
20 substantive criteria identified by the local government, except for two provisions of the
21 Sherman County Zoning Ordinance (SCZO), Sections 3.1.4 and 5.8.16(d). The Council then
22 considered whether the facility would comply with the applicable statewide planning goal
23 (Goal 3). The Council found that the facility would not comply with OAR 660-033-0130(22),
24 a Land Conservation and Development Commission (LCDC) administrative rule for
25 implementing the requirements for agricultural land as defined by Goal 3. Under the rule, a
26 “power generation facility” must not preclude more than 20 acres of land from use as a
27 “commercial agricultural enterprise.”

28 Because of the finding that the KWP would not comply with Goal 3, the Council
29 considered whether an exception to the goal was justified. The Council applied the criteria for
30 a “reasons” exception under ORS 469.504(2)(c) and concluded that an exception should be
31 allowed. Based on the exception to Goal 3 and the Council’s other findings, the Council
32 concluded that the KWP would comply with the Land Use Standard.

33 The changes in the facility that would be authorized under the requested amendment
34 would alter design and construction details but would not change the proposed land use. The
35 same land use criteria apply to the amendment as applied to the site certificate application.
36 Except as discussed below, the changes authorized under the amendment do not substantially
37 alter the underlying facts upon which the Council based its previous findings and conclusions
38 regarding land use.

A. Applicable Substantive Criteria

1 On page 25 of the Final Order on the Application, the Council discussed Goal XI of
2 the Sherman County Comprehensive Plan (SCCP):

3 *Goal XI: To maintain all species of fish and wildlife at optimum levels and prevent*
4 *the serious depletion of any indigenous species. [SCCP Section XI]*

5 The Council found the proposed KWP to be compatible with the goal of maintaining
6 fish and wildlife populations, relying in part on an analysis of compliance with the Council's
7 Fish and Wildlife Habitat Standard. The Council found that approximately 87 percent of the
8 land permanently affected and 84 percent of the land temporarily affected by the proposed
9 KWP is cultivated agricultural land that has low potential to become important habitat for
10 wildlife. If Amendment #1 were approved, approximately 88 percent of the land permanently
11 affected and 90 percent of the land temporarily affected would be cultivated or otherwise
12 developed land as shown in Table 5 below on page 40, based on worst-case assumptions.²³
13 Thus, under the amendment, the proposed facility would affect a smaller proportion of higher-
14 value wildlife habitat. The increase in the area of permanent impact under the amendment
15 includes no higher-value habitat. The increase in temporary disturbance during construction
16 would affect about seven acres of Category 3 and Category 4 habitat. The Council finds that
17 the proposed KWP would be compatible with Goal XI of the SCCP if Amendment #1 were
18 approved.

19 SCZO Section 5.8.14(a) requires the location of public facilities to "best serve" the
20 County or area. In addressing this criterion, the Council found that the KWP substations, wind
21 turbines and transmission lines were "public facilities" within the scope of the ordinance. The
22 Council found that to best serve their intended purpose, the substations and transmission lines
23 that would be part of the proposed KWP must be located within the general area of the wind
24 turbines and close to the point of interconnection with the Bonneville Power Administration
25 (BPA) system. The Council found that the location of these facilities would "best serve" the
26 County or the area because they would use a small fraction of agricultural land
27 (approximately 0.8 percent of the actively farmed acres adjacent to these facilities) to generate
28 significant new tax revenues for the County and income for the landowners of the property
29 leased to the facility. Under the proposed amendment, the KWP facilities would occupy
30 approximately 63 acres (approximately 0.9 percent) of actively farmed acres at or adjacent to
31 the site.²⁴

32 SCZO Section 5.8.16(a) requires a finding that the proposed use is compatible with
33 farm uses. The Council's findings that the construction and operation of the wind energy
34 facility would be compatible with farm use are discussed on page 35 of the Final Order on the
35 Application. The proposed amendment would not change the facts underlying the Council's
36 previous findings, except that the facility would occupy 0.9 percent (rather than 0.8 percent)
37 of the adjacent farmed area. The Council finds that this increase is insignificant.

²³ The certificate holder calculated the areas shown on Table 5 by placing turbines within the micro-siting corridors in locations that would affect the maximum area of higher-value habitat.

²⁴ Based on the data in Table 5 and Department's estimate that there are 7,150 acres of actively farmed land adjacent to the proposed facility (Final Order on the Application, p. 35, fn.47).

B. Applicable Statewide Planning Goals

1 In the Final Order on the Site Certificate, the Council found that the proposed KWP
2 would not comply with SCZO Sections 3.1.4 and 5.8.16(d) and therefore would not comply
3 with all applicable substantive criteria from Sherman County. As required under ORS
4 469.504(1)(b)(B), the Council then considered whether the proposed facility would otherwise
5 comply with Goal 3, the applicable statewide planning goal. The proposed KWP, as revised
6 by Amendment #1, would consist of the energy facility (the wind turbines) and the following
7 related or supporting facilities: the underground and aboveground power collection lines, one
8 substation, three meteorological towers, an O&M building, the control system and access
9 roads.²⁵ The Council found that the KWP energy facility is a “commercial utility facility for
10 the purpose of generating power for public use by sale,” which is allowed on agricultural land
11 under ORS 215.283(1)(d), and that the power collection system, meteorological towers,
12 control system and O&M building are part of that principal use.²⁶ In addition, the Council
13 found that a proposed aboveground 230-kV transmission line was part of the principal use.
14 Further, the Council found that the access roads are allowable under ORS 215.283(3).

15 Under Amendment #1, the 230-kV transmission line would be eliminated from the
16 facility. The amendment would also eliminate one of the two proposed substations. The
17 remaining substation would occupy a 4-acre site on Klondike Lane near the existing Klondike
18 I and II “Schoolhouse” facilities. This substation would function to step up the power to
19 accommodate interconnection with the BPA system at that location. In the Final Order on the
20 Application, the Council found that this substation is a “utility facility necessary for public
21 service,” which is allowed on agricultural land under ORS 215.283(1)(d).

22 Except for the elimination of the 230-kV transmission line and one substation,
23 Amendment #1 would not alter the Council’s analysis of compliance with Goal 3. For the
24 reasons discussed in the Final Order on the Application, the principal use and the access roads
25 for the KWP, as amended, would not force a significant change in accepted farm practices on
26 surrounding farm land and would not significantly increase the cost of accepted farm
27 practices. With the changed requested under Amendment #1, the KWP would still occupy less
28 than 1 percent of the actively farmed land adjacent to the facility.

29 Under the amendment, the amount of agricultural land temporarily unavailable for
30 crop production during construction of the KWP would increase from approximately 82 acres
31 to approximately 198 acres. This amounts to 2.8 percent (compared to 1.1 percent) of the
32 actively farmed area adjacent to the proposed KWP that would be out of production. The
33 Revegetation Plan (Attachment B) requires restoration of temporarily disturbed areas to begin
34 “as soon as possible after completion of facility construction, maintenance or repair activity in
35 the area to be restored.” Temporarily disturbed crop land could be returned to crop production
36 as soon as practicable once the disturbance activity has been completed and the area is no
37 longer needed for construction purposes. The Council finds that this temporary impact would
38 not force a significant change in accepted farm practices or significantly increase the cost of

²⁵ Under ORS 469.300, the “energy facility” is “an electric power generating plant.” Some facility components, such as the control system, might be considered intrinsic to the “electric power generating plant” and therefore part of the “energy facility” rather than separate, related or supporting facilities. The “related or supporting facilities” listed in the text are treated separately in this discussion, without implying any finding that any given component is separate from the energy facility.

²⁶ Final Order on the Application, p. 38.

1 accepted farm practices, for the reasons discussed in the Final Order on the Application, page
2 39. Accordingly, the changes requested under Amendment #1 would not affect the Council's
3 previous finding that the principal use and access roads would comply with the standards of
4 ORS 215.296 and OAR 660-033-0130(5).

5 In the Final Order on the Application, the Council addressed whether the KWP
6 principal use and access roads would comply with OAR 660-033-0130(22), which provides as
7 follows:

8 *(22) A power generation facility shall not preclude more than 20 acres from use as*
9 *a commercial agricultural enterprise unless an exception is taken pursuant to ORS*
10 *197.732 and OAR chapter 660, division 004*

11 The Council found that the "power generation facility" consists of the principal use
12 and the turbine string access roads.²⁷ The power generation facility would occupy
13 approximately 67 acres, an increase of almost seven acres as a result of the changes requested
14 in Amendment #1, as shown in Table 4. It would therefore occupy more than the 20 acres
15 allowed under OAR 660-033-0130(22), and to issue a site certificate the Council must find
16 that an exception to Goal 3 is justified.

Table 4: Area Occupied by the Power Generation Facility²⁸

Structure	Acres
Principal use	
Turbine towers, including pad areas and road turnouts	9.91
Meteorological towers	0.03
Aboveground 34.5 kV collector line ²⁹	0.14
O&M building site	4
Subtotal	14.08
Access roads ³⁰	53.24
Total	67.32

17 The changes to the facility that would be allowed under Amendment #1 would not
18 significantly affect the analysis that was the basis of the Council's previous finding that an
19 exception to Goal 3 should be allowed under ORS 469.504(2)(c).³¹ Under the amendment, the
20 proposed facility would occupy approximately 67 acres of agricultural land, which is still less
21 than 1 percent of the actively farmed land adjacent to the facility. Substantially all of the area
22 added by Amendment #1 would be occupied by access roads, which would be available for
23 use by the landowner in farm operations. The amendment would not otherwise alter the
24 reasons supporting the exception as discussed in the Final Order on the Application.

25 The amendment would add to the beneficial "energy consequences" of the proposed
26 facility by increasing the facility's average electric generating capacity from approximately 91

²⁷ Final Order on the Application, p. 40.

²⁸ Compare Table 4 above with Table 3 in the Final Order on the Application.

²⁹ Calculation based on memorandum from Dana Siegfried (for KIII), dated December 6, 2005, regarding "Response to 11/22/05 e-mail," assuming 12 miles of transmission line, 21 transmission poles per mile and 25 sq. ft. of farmland precluded per pole.

³⁰ Calculated by the Department, assuming 2.42 acres per mile of 20-foot-wide access road.

³¹ See Final Order on the Application, pp. 44-46.

1 megawatts to 95 megawatts. The amendment would not change the Council's previous
2 findings and analysis of environmental, economic, social and energy consequences or the
3 finding that the proposed facility would be compatible with adjacent land uses.

Conclusions of Law

4 Based on the findings stated above, the Council concludes that an exception to Goal 3
5 is justified and that the KWP would comply with the Council's Land Use Standard if
6 Amendment #1 were approved.

(b) Soil Protection

OAR 345-022-0022

7 *To issue a site certificate, the Council must find that the design, construction,*
8 *operation and retirement of the facility, taking into account mitigation, are not*
9 *likely to result in a significant adverse impact to soils including, but not limited to,*
10 *erosion and chemical factors such as salt deposition from cooling towers, land*
11 *application of liquid effluent, and chemical spills.*
12

Findings of Fact

13 In the Final Order on the Application, the Council found that the design, construction,
14 operation and retirement of the proposed KWP, taking into account mitigation and subject to
15 the conditions stated in the order, would not likely cause a significant adverse impact to soils.
16 The changes proposed in the request for Amendment #1 would increase the permanent
17 footprint by about seven acres for realigned access roads and would increase the area of
18 temporary disturbance by approximately 126 acres (more than doubling the area of temporary
19 disturbance).

20 The addition of crane paths accounts for 42 acres of the additional temporary
21 disturbance during construction. Allowing for the movement of large turbine assembly cranes
22 across farmland would reduce the distance that the cranes would have to travel from one
23 turbine string to the next. The certificate holder would restore areas of local soil compaction
24 along crane paths for agricultural or Conservation Reserve Program (CRP) use when the route
25 is no longer needed for facility construction.³² The Revegetation Plan (Attachment B) requires
26 restoration of temporarily disturbed areas to begin "as soon as possible after completion of
27 facility construction, maintenance or repair activity in the area to be restored." In most cases,
28 crane paths are used one time.³³ Once the disturbance activity has been completed and the
29 area is no longer needed for construction purposes, the crane path area would be restored.

30 Approval of Amendment #1 would not otherwise change the facts on which the
31 Council relied in its previous findings regarding impact to soils. The Council finds that the
32 design, construction, operation and retirement of the KWP as modified by Amendment #1

³² Proposed crane paths are located in areas currently used for agriculture, except for approximately 2.5 miles that is in CRP land near the V-string. The Conservation Reserve Program is a voluntary program for agricultural landowners. The program encourages landowners to plant long-term resource-conserving covers to improve soil, water and wildlife resources. Through the CRP, landowners receive annual rental payments, incentive payments and annual maintenance payments for certain activities and cost-share assistance to establish approved cover on eligible cropland. The Commodity Credit Corporation within the U.S. Department of Agriculture administers the program through the Farm Service Agency.

³³ E-mail from Sara McMahan, September 15, 2006.

1 would not likely result in significant adverse impact to soils, taking into account the
2 mitigation required by the site certificate conditions.

Conclusions of Law

3 The Council concludes that the KWP would comply with the Council's Soil Protection
4 Standard if Amendment #1 were approved.

(c) Protected Areas

OAR 345-022-0040

5 *(1) Except as provided in sections (2) and (3), the Council shall not issue a site*
6 *certificate for a proposed facility located in the areas listed below. To issue a site*
7 *certificate for a proposed facility located outside the areas listed below, the*
8 *Council must find that, taking into account mitigation, the design, construction*
9 *and operation of the facility are not likely to result in significant adverse impact to*
10 *the areas listed below. Cross-references in this rule to federal or state statutes or*
11 *regulations are to the version of the statutes or regulations in effect as of August*
12 *28, 2003:*
13

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

16 *(b) National monuments, including but not limited to John Day Fossil Bed*
17 *National Monument, Newberry National Volcanic Monument and Oregon Caves*
18 *National Monument;*

19 *(c) Wilderness areas established pursuant to The Wilderness Act, 16 U.S.C.*
20 *1131 et seq. and areas recommended for designation as wilderness areas pursuant*
21 *to 43 U.S.C. 1782;*

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

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

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

31 *(g) National recreation and scenic areas, including but not limited to Oregon*
32 *Dunes National Recreation Area, Hell's Canyon National Recreation Area, and*
33 *the Oregon Cascades Recreation Area, and Columbia River Gorge National*
34 *Scenic Area;*

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

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

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

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

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

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

11 *Coastal Oregon Marine Experiment Station, Astoria*

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

13 *Agriculture Research and Extension Center, Hermiston*

14 *Columbia Basin Agriculture Research Center, Pendleton*

15 *Columbia Basin Agriculture Research Center, Moro*

16 *North Willamette Research and Extension Center, Aurora*

17 *East Oregon Agriculture Research Center, Union*

18 *Malheur Experiment Station, Ontario*

19 *Eastern Oregon Agriculture Research Center, Burns*

20 *Eastern Oregon Agriculture Research Center, Squaw Butte*

21 *Central Oregon Experiment Station, Madras*

22 *Central Oregon Experiment Station, Powell Butte*

23 *Central Oregon Experiment Station, Redmond*

24 *Central Station, Corvallis*

25 *Coastal Oregon Marine Experiment Station, Newport*

26 *Southern Oregon Experiment Station, Medford*

27 *Klamath Experiment Station, Klamath Falls;*

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

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

34 (p) *State wildlife areas and management areas identified in OAR chapter*
35 *635, Division 8.*

36 * * *

Findings of Fact

1 In the Final Order on the Application, the Council found that the KWP would not be
2 located in any protected area as defined by OAR 345-022-0040(1) and that the design,
3 construction and operation of the facility would not result in significant adverse impact to any
4 protected area, taking into account mitigation and subject to the conditions included in the site
5 certificate. The Council found that indirect effects of noise, traffic and visual impact from the
6 KWP would not have any significant impact on protected areas.

7 Approval of Amendment #1 would allow construction and operation of facility
8 components outside of the previously permitted site boundary but within the certificate
9 holder's lease boundary. The expansion of the site boundary does not significantly increase
10 the analysis area and does not affect any protected areas not considered by the Council in the
11 Final Order on the Application.

12 The changes to the facility that would be allowed if Amendment #1 were approved
13 would not substantially change the facts on which the Council relied in its previous findings
14 regarding potential noise, traffic, water and wastewater impacts.

15 In assessing the visual impacts of the proposed KWP on protected areas, the Council
16 found that turbines having a hub-height of up to 80 meters would not have a significant visual
17 impact when viewed from a distance of five miles or more. The amendment would allow the
18 use of turbines with a larger generating capacity and larger rotor diameter, but the hub-height
19 would not exceed 80 meters. The overall height of allowed turbines would increase from
20 approximately 121 meters (397 feet) to 126 meters (414 feet), including the length of turbine
21 blades at their maximum vertical distance above hub-height. Although the amendment would
22 allow minor alterations in the boundaries of micro-siting corridors, the certificate holder would
23 not construct any turbines outside of the previously-approved 900-foot-wide micro-siting
24 corridors.³⁴

25 Table 4 in the Final Order on the Application lists all protected areas within 20 miles
26 of the site boundary. The only areas within five miles of the KWP that are managed in part for
27 outstanding scenic quality are portions of the John Day Federal Wild and Scenic River and the
28 John Day State Scenic Waterway. The next-closest protected areas that are managed for
29 scenic quality lie along the Deschutes River, at least eight miles from the KWP.

30 In the Request for Amendment #1, KIII included a visual impact analysis which
31 addressed the visibility of the KWP from scenic resource areas, including areas along the John
32 Day River. For the reasons discussed below in Section (d), the Council finds that the changes
33 to the facility that would be allowed if Amendment #1 were approved would not result in
34 visual impacts that would have any significant adverse effect on protected areas.

Conclusions of Law

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

³⁴ Request for Amendment #1, p. 2.

(d) Scenic and Aesthetic Values

OAR 345-022-0080

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

* * *

Findings of Fact

In the Final Order on the Application, the Council described the visual features of the proposed KWP.³⁵ Approval of Amendment #1 would not change the overall area occupied by the facility or change the maximum number of wind turbines that would be built. The number of turbines would likely decrease if larger-capacity turbines are used. The amendment would eliminate 3.5 miles of above-ground 230-kV transmission line but could increase the overall length of aboveground 34.5-kV transmission line from 5.5 miles to 12 miles. One substation would be eliminated. The overall length of access roads would increase by approximately three miles. At the option of the certificate holder, the O&M building might be located approximately 1.5 miles east of the previously-approved location.

The new wind turbine types allowed under Amendment #1 would be similar to the previously-approved types, except for a larger rotor-diameter. The larger rotor-diameter allowed under the amendment would increase the overall turbine height from approximately 121 meters (397 feet) to 126 meters (414 feet), including the length of turbine blades, but the hub-height (80 meters) would not increase. In the Final Order on the Application, the Council found that turbines having a hub-height of up to 80 meters would not have a significant visual impact when viewed from a distance of five miles or more.

Table 5 in the Final Order on the Application listed 13 federal and state land management areas within 30 miles of the site boundary. Only four of these management areas are within five miles of the KWP and contain scenic and aesthetic values identified as significant or important: the John Day River, the Oregon National Historic Trail, Sherman County and Gilliam County.

John Day River

Two protected areas lie along a segment of the John Day River: the John Day Federal Wild and Scenic River and the John Day State Scenic Waterway. As discussed in the Final Order on the Application, the Bureau of Land Management (BLM) manages the John Day River Canyon as an "area of high visual quality" and has designated the area as a Visual Resource Management Class II resource. Two sites along the John Day River within the analysis area are identified as Special Management Areas: the Oregon Trail Historic Sites at Fourmile Canyon and McDonald Crossing and the John Day River Canyon.

In the Request for Amendment #1, the certificate holder provided a visual impact analysis including computer modeling and visual simulations. The modeling tends to

³⁵ Final Order on the Application, p. 54.

1 overestimate visibility, because it does not include vegetation or other intervening structures
2 or account for variable climatic conditions. The analysis assumed that 2.4-MW turbines
3 would be used in the KWP (the largest of the turbine types that would be allowed under
4 Amendment #1). The analysis determined that turbines might be visible from locations within
5 the John Day River Canyon, including the Oregon National Historic Trail McDonald Ferry
6 site, but otherwise would be hidden by intervening topography.

7 To assist the Council in evaluating the significance of the visual impact under
8 Amendment #1, KIII used the methodology that was used in the site certificate application.
9 Based on computer modeling, KIII determined that portions of ten turbines might be visible
10 from areas within the John Day River Canyon. KIII designated five “worst-case” viewpoints
11 (defined as locations from which the most turbines might be visible at any given time). The
12 viewpoints and the composite visibility analysis are illustrated in Figure R-13 of the Request
13 for Amendment #1. KIII provided simulations to illustrate the portions of wind turbines that
14 would be visible above the horizon from the vantage point of each of the designated
15 viewpoints (Figures R-14 through R-18).

16 The results of the visual analysis under Amendment #1 are very similar to the results
17 of the analysis in the site certificate application. In most cases, only blade tips would be
18 visible above the ridgeline as viewed from the river. The visible portion of the KWP would be
19 a very small element within the landscape. The KWP would be visible from only a few
20 segments of the John Day River. For these reasons, the Council finds that construction and
21 operation of the KWP with the changes allowed under Amendment #1 would not result in
22 significant adverse impact to important scenic resources within the John Day River Canyon.

23 Oregon National Historic Trail

24 The management plan for the Oregon National Historic Trail identifies only one “high
25 potential” site within 30 miles from the KWP from which any part of the facility might be
26 visible: the John Day River Crossing.³⁶ “High potential” sites are sites that have potential to
27 interpret the Trail’s historical significance and that afford a high-quality recreational
28 experience and greater than average scenic values. The John Day River Crossing (McDonald
29 Crossing) is the location of Viewpoint #1 designated by KIII in the visual impacts analysis
30 described above. As described by KIII, portions of turbines X-03, X-04 and X-05 might be
31 visible from the John Day River and vantage points along the riverbank near McDonald
32 Crossing.³⁷ The KWP would not be visible from the BLM interpretive site or from the road
33 accessing the interpretive site.³⁸ The visual impact would not be significantly different from
34 the impact described in the Final Order on the Application. For this reason, the Council finds
35 that the KWP, with the changes allowed under Amendment #1, is not likely to result in
36 significant adverse impact to the scenic quality of the Oregon National Historic Trail site
37 identified as significant or important (McDonald Crossing).

38 Sherman County

39 The Sherman County Comprehensive Plan identifies scenic resources within the
40 County. SCCP Section XI, Finding XI, identifies “rock outcroppings, trees, the John Day

³⁶ Final Order on the Application, p. 56.

³⁷ See illustration in Figure R-14, Request for Amendment #1. Although turbine X-03 would not be visible from the viewpoint, this turbine might be visible from nearby vantage points.

³⁸ Request for Amendment #1, p. R-5.

1 River Canyon and the Deschutes River Canyon” as “important features of the County’s
2 landscape. The Finding also notes “scenic highway” designations by the Oregon Department
3 of Transportation. In the Final Order on the Application, the Council found that the proposed
4 KWP would not result in a significant adverse impact to the scenic resources identified in the
5 local Sherman County land use plan. The changes that would be allowed if Amendment #1
6 were approved would not change the basis of that finding.

7 Gilliam County

8 The nearest parts of Gilliam County are east of the John Day River, at least two miles
9 from the KWP site. As described in the Final Order on the Application, the Gilliam County
10 Comprehensive Plan identifies “rock outcroppings marking the rim and walls of steep canyon
11 slopes” as important scenic resources and identifies the John Day River corridor as a scenic
12 resource. The visual impact on the John Day River Canyon has been described above. The
13 amendment would have no effect on rock outcroppings and scenic canyons in Gilliam
14 County.

Conclusions of Law

15 For the reasons discussed above, the Council concludes that the KWP would comply
16 with the Council’s Scenic and Aesthetic Values Standard if Amendment #1 were approved.

(e) Recreation

17 **OAR 345-022-0100**

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

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

25 *(b) The degree of demand;*

26 *(c) Outstanding or unusual qualities;*

27 *(d) Availability or rareness;*

28 *(e) Irreplaceability or irretrievability of the opportunity.*

29 * * *

Findings of Fact

30 In the Final Order on the Application, the Council found that recreational
31 opportunities associated with the John Day River, the Journey Through Time Scenic Byway
32 and historic trail alignments are important recreational opportunities within the analysis area.
33 The Council found that the design, construction, operation and retirement of the proposed
34 KWP facilities would not result in significant adverse impact to these recreational
35 opportunities, taking into account the mitigation that is required under site certificate
36 conditions. The changes that would be allowed under Amendment #1 would not affect the
37 facts upon which the Council relied in making these findings. The Council finds that there has

1 been no change of facts or circumstances that would affect the Council's earlier findings
2 regarding the impacts of the KWP on recreational opportunities.

Conclusions of Law

3 For the reasons discussed above, the Council concludes that the KWP would comply
4 with the Council's Recreation Standard if Amendment #1 were approved.

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

5 **OAR 345-024-0010**

6 * * *

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

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

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

Findings of Fact

15 In the Final Order on the Application, the Council found that KIII could design,
16 construct and operate the proposed KWP facilities to exclude members of the public from
17 close proximity to the turbine blades and electrical equipment, to preclude structural failure of
18 the tower or blades that could endanger the public safety and to have adequate safety devices
19 and testing procedures. To ensure public safety, the Council included conditions 54, 58, 59,
20 60, 61, 62, 63, 64 and 98 in the site certificate.

21 Amendment #1 would allow the certificate holder to use turbines that have a rotor
22 diameter of up to 92.5 meters. Because there would be no increase in turbine hub height, the
23 turbine blade tips of these larger turbines would be approximately 34 meters (111 feet) above
24 ground at the closest point of rotation, or about 17 feet lower than the turbine types previously
25 approved. The Council finds that a clearance of 34 meters is an adequate distance to protect
26 public safety beneath the turbines. Amendment #1 would not involve any other change in the
27 design, size or location of facility components or any change in the conditions relating to
28 public safety. The Council finds that there has been no change of facts or circumstances that
29 would affect the Council's earlier findings regarding public health and safety at the KWP site.

Conclusions of Law

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

(g) Siting Standards for Wind Energy Facilities

33 **OAR 345-024-0015**

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

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

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

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

9 (c) Using only those signs necessary for facility operation and safety and signs
10 required by law;

11 (2) Can design and construct the facility to restrict public access by the following
12 methods:

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

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

16 (A) Removal of wind facility tower climbing fixtures to 12 feet from the
17 ground;

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

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

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

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

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

28 (b) Combining transmission lines and points of connection to local distribution
29 lines;

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

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

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

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

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

Findings of Fact

1 In the Final Order on the Application, the Council found that the certificate holder
2 could design and construct the KWP facilities to reduce visual impact, to restrict public access
3 and to reduce cumulative adverse environmental impacts in the vicinity to the extent
4 practicable in accordance with the requirements of OAR 345-024-0015. Amendment #1
5 would allow the construction of up to 61 larger turbines but would not increase the total
6 number of turbines authorized under the site certificate. The amendment would not alter the
7 site certificate conditions addressing mitigation of visual impacts.³⁹ The amendment would
8 not alter Condition 60, which addresses restriction of public access. All facility structures
9 would be located on private property with limited public access.

10 OAR 345-024-0015(3) addresses “cumulative adverse environmental impacts in the
11 vicinity” and requires the certificate holder to implement measures to reduce such impacts “to
12 the extent practicable.” In the Final Order on the Application, the Council found that the
13 certificate holder would implement the measures listed in the rule to reduce cumulative
14 impacts from construction of access roads, transmission lines and substations and from
15 creation of artificial habitat for raptors and raptor prey. Under the amendment, the combined
16 length of access roads would increase from 19 miles to 22 miles. Roads would be located in
17 cultivated agricultural land and would avoid higher-value habitat to the extent practical. The
18 Amendment would eliminate one of two previously-approved facility substations and the 3.5-
19 mile aboveground 230-kV transmission line previously approved by the Council, although the
20 maximum combined length of aboveground 34.5-kV transmission line might increase from
21 5.5 miles to 12 miles. Nevertheless, the certificate holder would be obliged to comply with
22 Condition 84, which requires the 34.5-kV collector system to be installed underground to the
23 extent practical. The certificate holder would also be bound by Condition 90, which requires
24 all aboveground transmission line support structures to be designed following the practices
25 suggested by the Avian Powerline Interaction Committee and to include anti-perching devices
26 on transmission pole tops and cross arms where the poles are located within ½ mile of
27 turbines.

28 In comments on the Request for Amendment #1, the U.S. Fish and Wildlife Service
29 (USFWS) stated that the “primary concern” of the federal agency is “to minimize adverse
30 impacts including cumulative impacts on birds and bats along the Columbia River corridor.”⁴⁰
31 The USFWS letter expressed concern that “the cumulative impacts analysis for avian
32 resources may inadequately describe cumulative effect of other planned wind power projects
33 in surrounding counties, including Klickitat County to the north and Gilliam County to the
34 east.”

35 The USFWS comments and recommendations “to better address avian and bat
36 mortalities” were similar (identical to a large extent) to comments and recommendations
37 expressed in a letter submitted to the BPA in response to the Draft Environmental Impact
38 Statement on the proposed BPA transmission interconnection between the Klondike III and
39 Biglow Canyon projects and the Federal Columbia River Transmission System.⁴¹ In the Final

³⁹ Conditions 98, 99 and 100.

⁴⁰ Letter from Nancy Gilbert, Field Supervisor, USFWS, August 25, 2006.

⁴¹ Letter from Preston Sleeper, Regional Environmental Officer, Department of Interior, Office of Environmental Policy and Compliance, June 19, 2006 (included in the BPA Klondike III/Biglow Canyon Wind Integration Project, Final Environmental Impact Statement, September 2006).

1 Environmental Impact Statement (FEIS), the BPA responded in detail to these comments and
2 recommendations. The FEIS considered the regional cumulative impacts from 16 existing or
3 proposed wind energy projects within a 2,600-square-mile region along the Columbia River in
4 Washington and Oregon.⁴² Assuming that all 16 wind projects were built (a total of 3,134
5 MW of wind energy capacity), the BPA analysis estimated potential cumulative annual
6 fatalities of 50 raptors, 1,980 to 4,000 passerines (in an estimated population of over one
7 million birds) and 3,130 to 8,000 bats.⁴³ In addition, the FEIS concluded that impacts to the
8 federally-protected bald eagle would be “isolated and rare.”⁴⁴ The FEIS does not provide an
9 estimate of the overall population of raptors or bats in the region, and therefore any
10 conclusions about the significance of the fatality estimates for the viability of populations of
11 raptor and bat species in the region would be speculative. Regarding the broad category of
12 passerines, the FEIS concluded “the cumulative impacts to all bird species is expected to be
13 moderate, and mortality rates are not expected to reduce the viability of any bird species
14 populations in the region.”⁴⁵

15 OAR 345-024-0015 is the only Council rule that specifically addresses “cumulative
16 adverse environmental impacts in the vicinity.” Although the rule does not define
17 “cumulative” impacts, the measures that the rule includes address local impacts (limiting local
18 road impacts, combining transmission lines and points of connection to local distribution
19 lines, connecting to existing substations where possible and avoiding the creation of artificial
20 raptor and raptor prey habitat within the site of the facility). The Council rule does not directly
21 address the potential regional or inter-state cumulative impacts on wildlife species that are the
22 focus of the USFWS comments. Federal agencies, such as the BPA, are in a better position
23 than the Council to assess regional impacts.

Conclusions of Law

24 For the reasons discussed above, the Council concludes that the KWP would comply
25 with the Council’s Siting Standards for Wind Energy Facilities if Amendment #1 were
26 approved.

(h) Siting Standards for Transmission Lines

OAR 345-024-0090

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

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

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

⁴² FEIS, p. 4-37.

⁴³ FEIS, pp. 4-36 to 4-39.

⁴⁴ FEIS, p. 4-38.

⁴⁵ FEIS, p. 4-38.

Findings of Fact

1 Transmission lines for the proposed KWP include underground and aboveground
2 34.5-kV collector lines. Under Amendment #1, the previously-approved aboveground 230-kV
3 transmission line would be eliminated. In the Final Order on the Application, the Council
4 found that KIII could design, construct and operate the proposed transmission lines in
5 accordance with the standards described in OAR 345-024-0090.

6 The amendment would increase the overall length of the collector system from 38
7 miles to 59 miles and would increase the allowable length of collector line aboveground from
8 5.5 miles to 12 miles.⁴⁶ Condition 88 includes specifications for construction of the 230-kV
9 and 34.5-kV transmission lines. The Council modifies Condition 88 as shown in Revision 15
10 (page 60 below) to eliminate reference to the 230-kV transmission line while retaining the
11 specifications regarding aboveground and underground segments of 34.5-kV collector line.
12 The changes that would be allowed if Amendment #1 were approved would not affect the
13 basis for the Council's previous findings that the 34.5-kV collector line could be designed,
14 constructed and operated in compliance with OAR 345-024-0090.

Conclusions of Law

15 For the reasons discussed above, the Council concludes that the KWP would comply
16 with the Council's Siting Standards for Transmission Lines if Amendment #1 were approved.
17 The Council modifies Condition 88.

4. Standards to Protect Wildlife

(a) Threatened and Endangered Species

OAR 345-022-0070

18 *To issue a site certificate, the Council, after consultation with appropriate state*
19 *agencies, must find that:*
20

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

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

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

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

⁴⁶ The amendment would eliminate 3.5 miles of aboveground 230-kV transmission line. Thus, the net increase in aboveground transmission line is three miles.

Findings of Fact

1 The amendment would enlarge the site boundary of the KWP to accommodate
2 micrositing of turbines, realignment of access roads, modifications to the routing of segments
3 of the power collection system, an alternate location for the O&M facility, crane paths and
4 new construction laydown areas. Although no turbines would be located outside of the
5 previously-approved 900-foot-wide micrositing corridors, these corridors would be widened
6 in some locations to accommodate potential temporary disturbance during construction. All of
7 the additional area that would be permanently affected as a result of Amendment #1 is
8 cultivated agricultural land (approximately 7 acres). The majority of additional temporary
9 disturbance would occur in cultivated or otherwise developed land (approximately 119 acres),
10 but an additional 0.6 acres of grassland and 6.4 acres of CRP land would be temporarily
11 disturbed under the amendment.

Plant Species

12 Based on an investigation for rare plant species described in the Final Order on the
13 Application, no threatened or endangered plant species listed as under ORS 564.105(2) are
14 likely to occur in the analysis area.⁴⁷ Most of the area affected under the amendment is
15 cultivated agricultural land, which is unsuitable for rare plant species. No populations of rare
16 plants were observed during on-site surveys conducted in May 2006, which included the area
17 within the 900-foot-wide turbine micrositing corridors.⁴⁸ An additional 6.4 acres of CRP land
18 would be temporarily disturbed under the amendment, primarily due to the location of a crane
19 path. This area is adjacent to, but outside of, the survey area. Due to the predominance of non-
20 native plant species in the adjacent CRP lands that were surveyed and the history of past
21 ground disturbance, it is unlikely that any rare plant species exist in the area. The Oregon
22 Department of Agriculture has concurred with this assessment.⁴⁹

23 David Evans and Associates surveyed all suitable, non-agricultural grassland and
24 shrub/steppe habitat that would be potentially affected under the amendment. The areas were
25 found to be “heavily impacted habitat with little native component,” and no rare plants were
26 found.⁵⁰

27 Accordingly, the Council finds that the design, construction, operation and retirement
28 of the proposed facility with the changed allowed under Amendment #1 are not likely to
29 adversely affect any endangered or threatened plant species.

Wildlife Species

30 Table 6 on page 70 of the Final Order on the Application lists the threatened and
31 endangered species that have a potential to occur within the five-mile analysis area, based on
32 the investigations described in the order. The changes described in the Request for
33 Amendment #1 would not expand the analysis area. In the Final Order on the Application, the
34 Council found that the only threatened or endangered species that the proposed KWP could
35 potentially affect are the bald eagle (federal and state threatened species) and American
36 peregrine falcon (state endangered species).
37
38

⁴⁷ Final Order on the Application, p. 69.

⁴⁸ Eagle Cap Consulting, *An Investigation of Rare Plant Resources Associated with the Expanded Analysis Area of the Proposed Klondike III Wind Project, Sherman County, Oregon*, May 12, 2006.

⁴⁹ E-mail from Dana Siegfried, September 18, 2006.

⁵⁰ E-mail from Phil Rickus, Ecologist, David Evans and Associates, September 22, 2006.

1 No bald eagle nests, roosting areas or critical habitat areas are known to exist within
2 the analysis area. Bald eagles have been observed feeding on wintering waterfowl along the
3 Columbia River corridor but have not been observed in upland areas within or near the KWP
4 site boundary.⁵¹ The changes to the facility that would be allowed if Amendment #1 were
5 approved would not affect the basis for the Council's previous finding that the design,
6 construction, operation and retirement of the facility are not expected to have any significant
7 adverse effect on bald eagles.

8 American peregrine falcons might appear in the analysis area year-round, but the
9 closest known nest site is about 6.5 miles from the KWP site. Prey species may exist within
10 the site boundary where suitable habitat exists, but no peregrine falcons were observed during
11 the winter and spring avian baseline surveys in 2004-2005.⁵² The changes to the facility that
12 would be allowed if Amendment #1 were approved would not affect the basis for the
13 Council's previous finding that the design, construction, operation and retirement of the
14 facility are not expected to have any significant adverse effect on American peregrine falcons.

15 Recognizing that nesting ranges and locations of bald eagles and peregrine falcons can
16 change over time, the Council adopted Condition 91, which requires the certificate holder to
17 review wildlife databases and consult with Frank Isaacs, Oregon State University Cooperative
18 Wildlife Unit, on an annual basis if construction of the proposed facility begins after 2006.
19 Fatality monitoring, raptor nest monitoring and avian use surveys required under Condition 95
20 would provide additional data regarding the possible use of the KWP site by bald eagles or
21 peregrine falcons.

Conclusions of Law

22 For the reasons discussed above, the Council concludes that the KWP would comply
23 with the Council's Threatened and Endangered Species Standard if Amendment #1 were
24 approved.

(b) Fish and Wildlife Habitat

OAR 345-022-0060

25 *To issue a site certificate, the Council must find that the design, construction,*
26 *operation and retirement of the facility, taking into account mitigation, are*
27 *consistent with the fish and wildlife habitat mitigation goals and standards of OAR*
28 *635-415-0025 in effect as of September 1, 2000.*
29

Findings of Fact

30 In the Final Order on the Application, the Council made findings regarding the
31 estimated potential impact of the KWP on wildlife habitat resulting from a "worst-case"
32 analysis. Based on the applicant's mapping of turbine locations in areas of "greater habitat
33 quantity or higher value habitat" within the proposed micro-siting corridors, the Council
34 determined the maximum area of permanent and temporary impact on higher-value habitat.
35 Under this worst-case analysis, the Council found that the placement of turbines, access roads
36 and other KWP structures would have a permanent effect on approximately 64 acres of land.⁵³

⁵¹ Final Order on the Application, pp. 71-72.

⁵² Final Order on the Application, p. 72

⁵³ The impact of these structures would be "permanent" for the life of the facility until completion of site

1 An additional 97 acres would be temporarily affected during construction. The Council found
2 that approximately 87 percent of the permanent impact and 82 percent of the temporary
3 impact would be on cultivated or otherwise developed agricultural land that is considered
4 Category 6 habitat under the Oregon Department of Fish and Wildlife (ODFW) standards in
5 OAR 625-415-0025.

6 In the Final Order on the Application, the Council found that higher-value wildlife
7 habitat permanently affected by the KWP included approximately 0.66 acres of Category 2
8 habitat, approximately 7.75 acres of Category 3 habitat and less than 0.1 acres of Category 4
9 habitat. Condition 97 requires the certificate holder to implement a Habitat Mitigation Plan to
10 improve the wildlife habitat quality of other acreage near the facility as mitigation for the
11 permanent impacts of the facility.

12 In addition to the direct “footprint” impacts of the facility, the Council recognized that
13 the facility could have an indirect impact on avian and bat species. To evaluate these indirect
14 effects and provide for additional mitigation based on survey data, the Council included
15 Condition 95, which requires implementation of a Wildlife Monitoring and Mitigation Plan.
16 In addition, the Habitat Mitigation Plan required under Condition 97 includes additional acres
17 to mitigate for possible “displacement effects” on grassland bird species that might be
18 discouraged from use of grassland areas near the KWP turbines.

19 The Council found that construction activities would have a temporary impact on
20 approximately 1.25 acres of Category 2 habitat, approximately 14.4 acres of Category 3
21 habitat and less than 0.1 acres of Category 4 habitat. Condition 81 requires the certificate
22 holder to restore all areas of temporary disturbance according to the methods, monitoring
23 procedures and success criteria described in a Revegetation Plan.

24 In the Final Order on the Application, the Council found that the KWP would comply
25 with the Habitat Standard, taking into consideration the mitigation required under the plans
26 described above and under other conditions of the site certificate.⁵⁴

27 The Request for Amendment #1 describes changes to the facility that would increase
28 the total area of permanent and temporary impact on habitat. Table 5 shows the revised area
29 of permanent and temporary impacts if Amendment #1 were approved.⁵⁵ The areas shown in
30 this table were estimated assuming a worst-case placement of turbines.⁵⁶

restoration.

⁵⁴ Final Order on the Application, pp. 72-85.

⁵⁵ Compare Table 5 herein with Table 7 in the Final Order on the Application. Table 5 is based on the Request for Amendment #1, Table P-1 as revised (e-mail from Dana Siegfried, September 20, 2006).

⁵⁶ E-mail from Dana Siegfried, September 8, 2006.

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

Habitat type	Area of temporary impact (acres)	Area of permanent impact (acres)
Category 2		
Grassland	1.25	0.63
Shrub-steppe	0.00	0.03
Category 3		
CRP	16.35	7.29
Grassland	3.29	0.43
Shrub-steppe	1.42	0.00
Upland trees	0.00	0.03
Category 4		
Grassland	0.286	0.05
Category 6		
Developed	2.67	0.00
Agricultural	198.1	62.86
TOTAL	223.37	71.32

1 As shown in Table 5, approximately 88 percent of the permanent impact and 90
2 percent of the temporary impact would be on cultivated or otherwise developed agricultural
3 land that is considered Category 6. Under the amendment, there would be no increase in the
4 area of permanent impact on higher-value habitat, and the calculation of mitigation acres for
5 the “footprint” impacts of the KWP would not change. Accordingly, the Council finds that
6 implementation of the previously-approved Habitat Mitigation Plan would be adequate
7 mitigation for the “footprint” impacts of the facility if Amendment #1 were approved.
8 Nevertheless, the Council revises the Habitat Mitigation Plan so that the description of
9 permanent impacts in the plan is consistent with the impacts that would be authorized under
10 Amendment #1. A revised Habitat Mitigation Plan is attached to this order (Attachment C)
11 and the changes are explained in Revision 18 at page 62 below.

12 Because the amendment might result in a different number of turbines being
13 constructed at the KWP site and because the amendment would authorize larger turbines, the
14 Council revises the Wildlife Monitoring and Mitigation Plan (WMMP). Implementation of
15 the WMMP is required under Condition 95. A revised WMMP is attached to this order
16 (Attachment A) and the changes are explained in Revision 17 at page 62 below.

17 Amendment #1, if approved, would increase the area of temporary disturbance.
18 Accordingly, the Council revises the Revegetation Plan to make the description of temporary
19 disturbance in the plan consistent with the temporary disturbance that would be authorized
20 under the amendment. Condition 81 requires the certificate holder to implement the
21 Revegetation Plan. A revised Revegetation Plan is attached to this order (Attachment B) and
22 the changes are explained in Revision 13 at page 60 below.

23 With the changes to the mitigation plans described above, the Council finds that the
24 KWP would be consistent with the fish and wildlife habitat mitigation goals and standards of
25 OAR 635-415-0025 under the proposed amendment.

Conclusions of Law

1 The Council concludes, subject to the revisions of the mitigation plans referenced in
2 Conditions 81, 95 and 97, that the KWP would comply with the Council's Fish and Wildlife
3 Habitat Standard if Amendment #1 were approved.

5. Standards Not Applicable to Site Certificate Eligibility

4 Under ORS 469.501(4), the Council may issue a site certificate without making the
5 findings required by the standards discussed in this section (Structural Standard, Historic,
6 Cultural and Archaeological Resources Standard, Public Services Standard and Waste
7 Minimization Standard).⁵⁷ Nevertheless, the Council may impose site certificate conditions
8 based on the requirements of these standards.

(a) Structural Standard

OAR 345-022-0020

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

11
12 (a) *The applicant, through appropriate site-specific study, has adequately*
13 *characterized the site as to seismic zone and expected ground motion and ground*
14 *failure, taking into account amplification, during the maximum credible and*
15 *maximum probable seismic events; and*

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

21 (c) *The applicant, through appropriate site-specific study, has adequately*
22 *characterized the potential geological and soils hazards of the site and its vicinity*
23 *that could, in the absence of a seismic event, adversely affect, or be aggravated by,*
24 *the construction and operation of the proposed facility; and*

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

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

31 * * *

⁵⁷ 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.

Conditions

1 In the Final Order on the Application, the Council made findings regarding the site-
2 specific characterization of seismic, geologic and soil hazards for the KWP. Amendment #1
3 would allow the use of larger turbines than the Council previously approved. Heavier turbines
4 are likely to require a modification of the design of tower foundations. Condition 53 requires
5 the certificate holder to conduct appropriate site-specific geotechnical investigation before
6 construction. This investigation is to determine the subsurface and foundation support
7 conditions at the locations of the turbine towers and other significant facility structures. The
8 certificate holder must consult with, and report geotechnical investigation findings to, the
9 Oregon Department of Geology & Mineral Industries. Condition 54 requires the certificate
10 holder to design and construct the facility in accordance with requirements set forth by the
11 State of Oregon's Building Code Division and any other applicable codes and design
12 procedures. In addition, Council rules include mandatory conditions regarding geotechnical
13 investigation and protection of the public from seismic hazards (Conditions 12, 13 and 14).
14 The changes that would be allowed if Amendment #1 were approved would not affect site
15 certificate conditions related to the Structural Standard. The Council finds that no new or
16 amended site certificate conditions are needed under the proposed amendment.

(b) Historic, Cultural and Archaeological Resources

OAR 345-022-0090

17
18 *(1) Except for facilities described in sections (2) and (3), to issue a site certificate,*
19 *the Council must find that the construction, operation and retirement of the*
20 *facility, taking into account mitigation, are not likely to result in significant*
21 *adverse impacts to:*

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

24 *(b) For a facility on private land, archaeological objects, as defined in ORS*
25 *358.905(1)(a), or archaeological sites, as defined in ORS 358.905(1)(c); and*

26 *(c) For a facility on public land, archaeological sites, as defined in ORS*
27 *358.905(1)(c).*

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

32 * * *

Conditions

33 In the Final Order on the Application, the Council reviewed the field investigation and
34 cultural resource report prepared by Archaeological Investigations Northwest, Inc. (AINW).
35 The field investigations, conducted between January and March 2005, focused on a survey
36 area within 264-foot-wide corridors centered on the alignments of turbine strings, access
37 roads and underground utility lines proposed in the site certificate application and within a 50-
38 foot-wide survey corridor on the north side of Klondike Lane where a proposed aboveground
39 230-kV transmission line would be built. In addition, the survey area included proposed

1 substation sites, laydown areas and existing roads that would be widened. The 2005 AINW
2 investigation found four archaeological resources, consisting of prehistoric archaeological
3 isolates and a small assemblage of historic-period refuse. These resources were not considered
4 significant. The investigation also identified several historic-period resources, but these
5 resources were not considered significant or eligible for listing on the National Register of
6 Historic Places. Because the 2005 investigation did not include other areas within the
7 approved 900-foot-wide micro-siting corridors, the Council adopted Condition 48, which
8 requires additional field investigation in areas those areas outside of the 2005 survey area
9 where construction-related impacts might occur.

10 In addition, the Council adopted Condition 49 (requires construction personnel to be
11 trained in the identification of archeological or cultural materials), Condition 50 (requires that
12 earth-disturbing activities be halted if archeological objects are discovered in the course of
13 construction of the facility, in accordance with ORS 97.745 and 358.920), Condition 51
14 (requires that construction of the KWP proceed carefully in the vicinity of the mapped
15 alignment of the Oregon Trail and that any intact physical evidence of the trail discovered
16 during construction be protected from disturbance) and Condition 52 (requires pre-
17 construction photo-documentation of the setting of the Oregon Trail alignment and
18 enhancement of the existing Oregon Trail historical marker at Biggs).

19 AINW conducted a supplemental cultural resource survey in June 2006. The survey
20 included areas potentially affected during construction of the facility as proposed under
21 Amendment #1. Survey corridors for turbine strings ranged in width from 300 to 500 feet.
22 Because the surveyed area is less than the area approved by the Council for micro-siting, the
23 Council modifies Condition 48, as requested by KIII, to require additional pre-construction
24 investigation in areas outside the 2005 and 2006 survey areas where construction-related
25 impacts might occur.

26 In the June 2006 survey, AINW identified 22 archaeological resources and one
27 historic-period building that had not been identified in the 2005 survey. Of the 22 newly-
28 identified archaeological resources, 9 were archaeological isolates and were not considered
29 significant; however, the location of one isolate was obscured by vegetation, and AINW
30 recommended re-survey of the location after the field has been harvested. Of the remaining 13
31 resources, two were determined to be outside the proposed site boundary, and AINW
32 considered eight historic-period sites (debris) to be not eligible for listing in the National
33 Register of Historic Places. For the remaining three archaeological sites, AINW
34 recommended that one site be resurveyed after harvest and that another site (designated
35 "M1") be investigated with test excavations to determine if buried features associated with a
36 homestead are present. The final archaeological site (designated "M7") was later found to be
37 outside the site boundary; however, AINW recommended test excavations in an area within
38 the site boundary immediately to the south of the archaeological site.

39 AINW identified 15 "high-probability areas" (areas within the site boundary
40 considered likely to have archaeological resources). AINW recommended post-harvesting re-
41 survey of 12 of these sites and test excavations at the other three (one of which is the area
42 south of M7, described above) before any ground-disturbing construction activity occurs in
43 those locations.

1 In comments submitted to the Department, the State Historic Preservation Office
2 (SHPO) expressed its interest in the site designated M1, described above.⁵⁸ The SHPO
3 advised that the certificate holder should be required to conduct the test excavations
4 recommended by AINW at this site (if there could be a construction impact at the site based
5 on the final design of the facility) and to submit the results to the SHPO. The certificate
6 holder would be required to avoid impact to any resources determined significant by the
7 SHPO.

8 The Council amends Condition 48 to incorporate the AINW and SHPO
9 recommendations.⁵⁹ Revision 12 at page 59 below describes the amendment of Condition 48.

(c) Public Services

OAR 345-022-0110

10
11 *(1) Except for facilities described in sections (2) and (3), to issue a site certificate,*
12 *the Council must find that the construction and operation of the facility, taking*
13 *into account mitigation, are not likely to result in significant adverse impact to the*
14 *ability of public and private providers within the analysis area described in the*
15 *project order to provide: sewers and sewage treatment, water, storm water*
16 *drainage, solid waste management, housing, traffic safety, police and fire*
17 *protection, health care and schools.*

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 * * *

Conditions

23 In the Final Order on the Application, the Council discussed the public service impacts
24 of construction and operation of the KWP regarding sewage, storm water, solid waste, water
25 supply, housing, police and fire protection, health care, schools and traffic safety. The Council
26 found that the impacts would not be significant. Conditions adopted to address other Council
27 standards adequately addressed the Council's concerns under the Public Service Standard.⁶⁰

28 The changes that would be allowed under Amendment #1 would not increase the
29 number employees during construction or operation. The amendment would not change the
30 quantity of solid waste, wastewater or storm water. The amendment would not increase traffic
31 volume on nearby roads during construction or operation compared to traffic volumes without
32 the amendment. The requested changes would not increase the level of fire risk or the need for
33 other emergency response. For these reasons, the Council concludes that no new or modified
34 conditions are required.

⁵⁸ Personal communications with Susan White, State Historic Preservation Office, September 2006.

⁵⁹ AINW clarified its recommendations in a memo from David Ellis, dated September 7, 2006 (e-mail from David Ellis, September 7, 2006).

⁶⁰ Conditions that address the issues under the Public Service Standard include Conditions 39, 40, 41, 44, 63, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 78, 79, 80, 82, 83, 103, 104, 105, 106 and 107.

(d) Waste Minimization

OAR 345-022-0120

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

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

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

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

* * *

Conditions

In the Final Order on the Application, the Council adopted Conditions 105, 106 and 107, which address solid waste management on the site during construction and operation. The Council adopted Conditions 73 and 74, which address proper handling of hazardous materials and response to spills and accidental releases of hazardous materials. Conditions 80, 83, 103 and 104 address industrial and sanitary wastewater during construction and operation. The changes that would be allowed under Amendment #1 would not increase the amount of solid waste or wastewater that is expected to result from construction and operation. The amendment would not affect site certificate conditions related to the Waste Minimization Standard. The Council concludes that no new or modified conditions are required.

V. OTHER APPLICABLE REGULATORY REQUIREMENTS: FINDINGS AND CONCLUSIONS

1. Requirements under Council Jurisdiction

Under ORS 469.503(3) and under the Council's General Standard of Review (OAR 345-022-0000, the Council must determine that the proposed facility complies with "all other Oregon statutes and administrative rules identified in the project order, as amended, as applicable to the issuance of a site certificate for the proposed facility." Other Oregon statutes and administrative rules that are applicable to the changes requested in Amendment #1 include the noise control regulations adopted by the Environmental Quality Commission, the Division of State Lands' regulations for removal or fill of material affecting waters of the state and the Water Resources Department's (WRD) regulations for appropriating ground water, and the Council's statutory authority to consider protection of public health and safety.⁶¹

⁶¹ In the Final Order on the Application, the Council addressed the Oregon Department of Transportation's regulations for location and construction of buried cables within State Highway right-of-way. The changes

(a) Noise Control Regulations

The applicable noise control regulations are as follows:

OAR 340-035-0035

Noise Control Regulations for Industry and Commerce

(1) Standards and Regulations:

* * *

(b) New Noise Sources:

* * *

(B) New Sources Located on Previously Unused Site:

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

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

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

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

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

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

requested in Amendment #1 would not affect the Council's previous findings regarding these regulations and would not require any change to Condition 86 (required permit).

1 wind energy facility to increase the ambient statistical noise levels, L10 or L50 on
2 the sensitive property by more than 10 dBA at the appropriate measurement point.

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

14 (V) For purposes of determining whether an operating wind energy facility
15 complies with the ambient noise standard where a landowner has not waived the
16 standard, noise levels at the appropriate measurement point are measured when
17 the facility's nearest wind turbine is operating over the entire range of wind speeds
18 between cut-in speed and the windspeed corresponding to the maximum sound
19 power level and no turbine that could contribute to the noise level is disabled. The
20 facility complies with the noise ambient background standard if the increase in
21 noise over either the assumed ambient noise level of 26 dBA or to the actual
22 ambient background L10 and L50 noise level, if measured, is not more than 10
23 dBA over this entire range of wind speeds.

24 (VI) For purposes of determining whether a proposed wind energy facility
25 would satisfy the Table 8 standards, noise levels at the appropriate measurement
26 point are predicted by using the turbine's maximum sound power level following
27 procedures established by IEC 61400-11 (version 2002-12), and assuming that all
28 of the proposed wind facility's turbines are operating at the maximum sound
29 power level.

30 (VII) For purposes of determining whether an operating wind energy facility
31 satisfies the Table 8 standards, noise generated by the energy facility is measured
32 at the appropriate measurement point when the facility's nearest wind turbine is
33 operating at the windspeed corresponding to the maximum sound power level and
34 no turbine that could contribute to the noise level is disabled.

35 * * *

Findings of Fact

36 In the Final Order on the Application, the Council found that noise levels generated
37 by the proposed facility would not exceed the "maximum allowable" (Table 8) test described
38 in OAR 340-035-0035(1)(b)(B) at any of the seven noise sensitive receivers that have the
39 potential of receiving noise from the proposed facility. The Council found that the predicted
40 noise levels at five of the seven receivers would exceed the ambient degradation limit
41 described in the regulation. To ensure compliance with the regulation, the Council adopted
42 Condition 102. Under the condition, facility noise levels could exceed the 10-dBA ambient

1 degradation limit if the certificate holder obtains a “legally effective easement or real
2 covenant” from the affected landowners. For those properties for which the landowner has not
3 signed a “waiver” of the ambient degradation limit, Condition 102 requires the certificate
4 holder to identify the final turbine locations and provide a noise analysis that demonstrates
5 that the facility would comply with the 10-dBA limit.

6 The Council based its findings on an analysis provided by the applicant and reviewed
7 by the Department’s noise consultant, Kerrie Standlee of Daly Standlee and Associates. The
8 analysis assumed a maximum turbine sound power level of 106 dBA, which was the highest
9 sound level within the operating wind speeds associated with the two turbine types approved
10 for use at the KWP.

11 In the Request for Amendment #1, the certificate holder asks the Council to approve
12 the use of larger turbines that have a higher sound power level. The certificate holder
13 provided a map (Figure B-1) showing the general layout of turbine strings in relation to the
14 location of the seven noise sensitive receptors if the maximum number of larger turbines were
15 constructed.⁶² In analyzing the potential noise effects if Amendment #1 were approved, the
16 certificate holder assumed a maximum sound power level of 107 dBA for turbines having a
17 generating capacity of 2.3 MW and 110 dBA for turbines having a generating capacity of 2.4
18 MW.⁶³ In correspondence with the Department, the certificate holder specified that, in all but
19 one of the proposed locations for the larger turbines, the amendment would allow turbines
20 having a maximum sound power level of not more than 107 dBA but would allow a turbine
21 having a maximum sound power level of not more than 110 dBA in location K-02.⁶⁴ The
22 Council amends Condition 28 to incorporate these restrictions, as described in Revision 8
23 below at page 56. The analysis assumed a maximum sound power level of 106 dBA for the
24 previously-approved smaller turbines (shown as blue dots on the layout map described
25 above).

26 To accommodate micro-siting flexibility, the certificate holder assumed a worst-case
27 location for each turbine; that is, the turbines were modeled using the locations within the
28 micro-siting corridors closest to the receptor.⁶⁵ To perform the analysis, KIII used the Sound
29 Propagation Model for Outdoor Noise Sources (SPM 9613, Version 2) to predict turbine noise
30 levels at the seven noise sensitive receivers. Based on the assumed turbine locations, the
31 predicted hourly L₅₀ noise levels at five of the seven receivers would exceed the 36-dBA limit
32 of the “ambient degradation” test, but turbine operating noise would not exceed the 50-dBA
33 “maximum allowable” (Table 8) test at any of the receivers. Table 6 shows the predicted
34 maximum noise levels:

⁶² Figure B-1, “Preconstruction Report for the Amended Klondike III Wind Project” prepared by TWE Environmental, Inc., submitted to the Department on August 22, 2006, referred to herein as the “TWE Supplemental Report.”

⁶³ The certificate holder provided supporting documentation for the warranted sound power level of a 2.3-MW turbine and a discussion of the estimated sound power level for a 2.4-MW turbine (TWE Supplemental Report, p. 4 and Appendix A).

⁶⁴ E-mail from Jesse Gronner, August 8, 2006.

⁶⁵ TWE Supplemental Report, Figures C-1 through C-7 and discussion at page 8.

Table 6: Predicted Noise Based on Assumed Turbine Locations

Receiver	Predicted Maximum Hourly L₅₀ Noise Level (dBA)
R1	36
R2	36
R3	38
R4	43
R5	42
R6	45
R7	43

1 The certificate holder has submitted to the Department a “legally effective easement or
2 real covenant” authorizing the certificate holder’s operation of the facility to increase ambient
3 statistical noise levels L₁₀ and L₅₀ by more than 10 dBA for receivers R2, R3, R4, R6 and
4 R7.⁶⁶ Based on the “noise waivers,” the noise level at these receivers may exceed the 36-dBA
5 limit.⁶⁷ Accordingly, the certificate holder has provided verification of compliance with both
6 of the tests described in OAR 340-035-0035(1)(b)(B) for these receivers.

7 The certificate holder has not obtained an easement or covenant waiving the 10-dBA
8 limit at R5. To ensure compliance with the noise regulation if a waiver is not obtained before
9 construction, the certificate holder provided an analysis of estimated noise levels at R5 with
10 turbines F-01, -02, -03 and 04 in the worst-case locations (locations within the micrositing
11 corridors closest to R5), with turbines F-05, -06, -07, -08 and J-01 eliminated and with the
12 remaining J-string turbines located as shown in Figure D-1 of the analysis report.⁶⁸ Table 7
13 specifies the J-string turbine locations used for the analysis. The modeling predicted an
14 estimated maximum hourly L₅₀ noise level of 35 dBA at R5 under this configuration.⁶⁹

Table 7: J-String Turbine Locations

Turbine	Latitude	Longitude
J-02	45.62205	-120.55320
J-03	45.62065	-120.55320
J-04	45.61925	-120.55320
J-05	45.61782	-120.55320
J-06	45.61639	-120.55320
J-07	45.61499	-120.55320
J-08	45.61359	-120.55320
J-09	45.61220	-120.55320
J-10	45.61077	-120.55320
J-11	45.60937	-120.55320
J-12	45.60798	-120.55320
J-13	45.60659	-120.55320

⁶⁶ Appendix X-1, Request for Amendment #1, and attachments to e-mail from Jesse Gronner, August 29, 2006.

⁶⁷ OAR 340-035-0035(1)(b)(B)(iii)(III).

⁶⁸ TWE Supplemental Report, Appendix D, and Figure 1 of the memorandum from Francesca Sims, TW Environmental, September 28, 2006.

⁶⁹ Memorandum from Francesca Sims, TW Environmental, September 28, 2006.

1 Accordingly, the Council finds that operation of the facility would not increase
2 ambient statistical noise levels L_{10} and L_{50} by more than 10 dBA at R5 if the J-string turbines
3 were constructed as specified in Table 7, turbines F-05, -06, -07, -08 and J-01 were not built
4 and turbines F-01, -02, -03 and 04 were built no closer to R5 than the worst-case locations.⁷⁰
5 To incorporate these restrictions, the Council amends Condition 102 as described in Revision
6 19 below at page 62. As an alternative, the revision would allow the certificate holder to
7 present data to the Department before beginning construction to demonstrate that the facility
8 would not generate noise in excess of 36 dBA at R5 when the F and J-string turbines are
9 placed in their final design locations.

Conclusions of Law

10 Based on the findings above, the Council concludes that, if Amendment #1 were
11 approved, the KWP would comply with the applicable noise control regulations in OAR 340-
12 035-0035, subject to amendment of Conditions 28 and 102 as discussed herein.

(b) Removal-Fill Law

13 The Oregon Removal-Fill Law (ORS 196.800 through 990) and regulations (OAR
14 141-085-0005 through 141-085-0090) adopted by the Department of State Lands (DSL)
15 require a Removal/Fill Permit if 50 cubic yards or more of material is removed, filled or
16 altered within any “waters of the state” at the proposed site.⁷¹ The Council must determine
17 whether a permit is needed. In addition, the U.S. Army Corps of Engineers administers
18 Section 404 of the Clean Water Act, which regulates the discharge of fill into waters of the
19 United States (including wetlands). Under Section 404, a federal Nationwide or Individual fill
20 permit may be required.

21 In the Final Order on the Application, the Council concluded that a Removal/Fill
22 permit was not needed, subject to the requirements of Condition 79. Condition 79 requires the
23 certificate holder to avoid impacts to waters of the state identified in Appendix J-1 of the site
24 certificate application and to conduct a pre-construction investigation in any locations that
25 would be affected by construction but that had not previously been investigated. Condition 79
26 requires the certificate holder to submit a written report on the pre-construction investigation
27 to the Department of Energy and to the Department of State Lands for approval before
28 beginning construction and to ensure that construction of the facility would have no impact on
29 any jurisdictional water identified in the report.

30 The changes requested by Amendment #1 include changes to the site boundary. The
31 certificate holder conducted an investigation within a revised “wetland analysis area
32 boundary” and submitted the results of that investigation to DSL.⁷² The investigation
33 concluded that the changes in the design of the KWP that would be allowed under
34 Amendment #1 would not affect any jurisdictional waters not identified in the previous
35 investigation (and addressed by Condition 79).

⁷⁰ Under the worst-case configuration, the closest turbine (F-01) is 7,990 feet from R5 (e-mail from Dana Siegfried, September 7, 2006).

⁷¹ OAR 141-085-0010(225) defines “Waters of this State.” The term includes wetlands and certain other water bodies.

⁷² Request for Amendment #1, Appendix J-1.

Conclusions of Law

1 Based on the findings discussed above, the Council concludes that the KWP would
2 comply with applicable regulations pertaining to jurisdictional waters of the state if
3 Amendment #1 were approved and that no removal/fill permit is required. The Council
4 concludes that no amendment of Condition 79 is needed.

(c) Ground Water Act

5 Through the provisions of the Ground Water Act of 1955, ORS 537.505 to ORS
6 537.796, and OAR Chapter 690, the Oregon Water Resources Commission administers the
7 rights of appropriation and use of the ground water resources of the state. Under OAR 345-
8 022-0000(1), the Council must determine whether the proposed KWP complies with these
9 statutes and administrative rules.

Findings of Fact

10 In the Final Order on the Application, the Council found that the certificate holder
11 could obtain sufficient water during construction (approximately 18 million gallons) and that
12 no new water right would be needed. The Council found that less than 5,000 gallons per day
13 would be used during facility operation for domestic purposes and blade-washing. This water
14 would come from a new on-site well. No new water right would be needed for this use. The
15 Council adopted Condition 83, which requires the certificate holder to demonstrate to the
16 Department that blade-washing would be authorized under a DEQ general permit or that no
17 permit would be required.

18 The changes that would be allowed under Amendment #1 would not change the
19 number of employees during facility operation or affect the quantity of water that is likely to
20 be used for blade-washing. The amendment would allow larger turbines to be built, but would
21 not increase the number of turbines. Accordingly, the amendment would not increase the
22 quantity of water needed during construction.

Conclusions of Law

23 Based on the findings discussed above, the Council concludes that the KWP would
24 comply with applicable regulations pertaining to water rights if Amendment #1 were
25 approved and that no amendment of Condition 83 is needed.

(d) Public Health and Safety

26 Under ORS 469.310, the Council is charged with ensuring that the "siting,
27 construction and operation of energy facilities shall be accomplished in a manner consistent
28 with protection of the public health and safety...." State law further provides that "the site
29 certificate shall contain conditions for the protection of the public health and safety...." ORS
30 469.401(2).

Findings of Fact

31 In the Final Order on the Application, the Council made findings regarding public
32 safety addressing fire protection, magnetic field effects from transmission lines, highway
33 safety and coordination with the Oregon Public Utility Commission. The changes that would
34 be allowed if Amendment #1 were approved would not change any of the Council's previous

1 findings, except that the facility would not include a 230-kV transmission line. The Council
2 finds that no changes to the public safety conditions described in the Final Order on the
3 Application are needed.

Conclusions of Law

4 Based on the findings discussed above, the Council concludes that the KWP would
5 comply with requirements to protect public health and safety if Amendment #1 were approved
6 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

7 Under ORS 469.503(3), the Council does not have jurisdiction for determining
8 compliance with statutes and rules for which the federal government has delegated the
9 decision on compliance to a state agency other than the Council. Nevertheless, the Council
10 may rely on the determinations of compliance and the conditions in the federally-delegated
11 permits issued by these state agencies in deciding whether the proposed facility meets other
12 standards and requirements under its jurisdiction. As required under Condition 76, the
13 certificate holder would conduct all construction work in compliance with an Erosion and
14 Sediment Control Plan satisfactory to the Oregon Department of Environmental Quality and
15 as required under the federally-delegated National Pollutant Discharge Elimination System
16 Storm Water Discharge General Permit #1200-C. The requirements of the 1200-C permit
17 would apply to the facility as described under the amendment.

(b) Requirements That Do Not Relate to Siting

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

VI. GENERAL APPLICATION OF CONDITIONS

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

34 In addition to all other conditions referenced or included in this order, the site
35 certificate holder is subject to all conditions and requirements contained in the rules of the

1 Council and in local ordinances and state law in effect on the date the amended site certificate
2 is executed.⁷³ Under ORS 469.401(2), upon a clear showing of a significant threat to the
3 public health, safety or the environment that requires application of later-adopted laws or
4 rules, the Council may require compliance with such later-adopted laws or rules.

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

VII. GENERAL CONCLUSION

9 The proposed amendment would allow the changes to the design and construction of
10 the KWP as described herein. The Council finds that revisions to conditions 28, 31, 32, 43,
11 48, 84, 88, 92 and 102 and revisions to the *Wildlife Monitoring and Mitigation Plan*
12 (Attachment A), the *Revegetation Plan* (Attachment B) and the *Habitat Mitigation Plan*
13 (Attachment C) would be needed if the Council approves 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 #1 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 #1 complies with the standards adopted by the Council
20 pursuant to ORS 469.501.
- 21 3. The proposed Amendment #1 complies with all other Oregon statutes and
22 administrative rules applicable to the amendment of the site certificate for the
23 Klondike III Wind Project 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 set forth below.

1. Revisions to the Site Certificate

28 New text added by the Council is shown with single underline. New text proposed by
29 KIII with concurrence by the Council is shown with double underline. Deletions are shown
30 with a strikethrough.

Revision 1

31 *Page 1, lines 6-10:*

32 The findings of fact, reasoning and conclusions of law underlying the terms and conditions of
33 this site certificate are set forth in the following documents related to the facility, which are
34 incorporated herein by this reference: (a) the Council's Final Order on the Application issued
35 on June 30, 2006 and (b) the Council's Final Order on Amendment #1. In interpreting this site

⁷³ 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 certificate, any ambiguity will be clarified by reference to the following, in order of priority:
2 (1) this First Amended Site Certificate, (2) the Final Order on Amendment #1, (23) the Final
3 Order on the Application and (34) the record of the proceedings that led to the Final Orders on
4 the Application and Amendment #1. [Amendment #1]

Explanation

5 This revision includes a reference in the site certificate to the findings of fact,
6 reasoning and conclusions in support of the present amendment. The revision establishes the
7 order of priority in which the underlying documents should be considered in resolving any
8 ambiguity. The parenthetical reference at the end of the paragraph follows standard practice
9 and provides a historical reference of when these changes were made to the site certificate.

Revision 2

10 *Page 1, lines 21-27*

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

Explanation

18 The revision includes the Final Order on Amendment #1 in the scope of matters
19 addressed in the site certificate.

Revision 3

20 *At page 2, lines 18-24:*

21 The energy facility is an electric power generating plant with an average electric generating
22 capacity of approximately ~~9194.33~~ 95 megawatts and a peak generating capacity of not more
23 than ~~272.25283~~ 285 megawatts that produces power from wind energy. The facility consists of
24 not more than 165 wind turbines, each with a peak generating capacity of not more than
25 ~~1.652.4~~ megawatts. Turbines are mounted on tubular steel towers. The turbine towers are
26 about ~~265~~ 263 feet tall at the turbine hub and have an overall height of ~~about 400~~ 413 not more
27 than 415 feet including the radius swept by the turbine blades. The energy facility is described
28 further in the Final Order on the Application Amendment #1. [Amendment #1]

Explanation

29 This revision of the facility description is based on the information supplied to the
30 Department by the certificate holder during review of the amendment request.

Revision 4

31 The facility includes the following related or supporting facilities described below and in
32 greater detail in the Final Order on the Application Amendment #1:

- 33 • Power collection system
- 34 • Substations and interconnection system
- 35 • Meteorological towers

- 1 • Operations and maintenance building
- 2 • Control system
- 3 • Access roads
- 4 • ~~Temporary laydown and staging construction~~ areas

5 [Amendment #1]

6 Explanation

7 This revision modifies the description of the permitted related and supporting facilities
8 consistent with the amendment request. Construction areas include temporary crane paths in
9 addition to laydown and staging areas.

10 Revision 5

11 *Page 2, lines 35-37, and page 3, lines 1-3:*

12 A power collection system operating at 34.5 kilovolts (kV) transports power from each turbine
13 to a collector substation. Most of the collection system is in underground segments but may
14 include aboveground segments, not exceeding ~~5.5~~12 miles in combined length, mounted on
15 monopole support structures. Power from the eastern section of the facility is transmitted to a
16 substation near Schoolhouse on an underground and aboveground 34.5-kV collector
lines power line operating at 230 kV approximately 3.5 miles in length, supported on wood or
steel poles. [Amendment #1]

17 Explanation

18 This revision modifies the description of the power collection system consistent with
19 the amendment request.

20 Revision 6

21 *Page 3, lines 5-8:*

22 The facility includes ~~two substations. One is one substation~~ located near the BPA-existing
23 Klondike I and II “Schoolhouse” facilities ~~Substation, and the other is located near Webfoot.~~
The power generated by the facility interconnects with the regional transmission grid at that
location through the BPA Klondike Schoolhouse Substation. [Amendment #1]

24 Explanation

25 This revision modifies the description of substation facilities. The certificate holder
26 proposes to build one substation and to eliminate the proposed Webfoot substation previously
approved by the Council. There is no BPA substation at the Schoolhouse location.

27 Revision 7

28 *Page 3, lines 24-26:*

29 **Temporary Laydown and Staging Construction Areas**

30 During construction, the facility includes temporary laydown areas used to stage construction
31 and store supplies and equipment during construction and temporary crane paths for efficient
movement of cranes between turbine strings. [Amendment #1]

Explanation

1 This revision modifies the description of temporary disturbance areas. Additional
2 temporary disturbance allowed under the amendment would include disturbance from crane
3 paths.

Revision 8

4 *Page 10, lines 12-14:*

5 (28) The certificate holder shall construct a facility that includes up to 165 wind turbines
6 substantially as described in the site certificate, subject to the following restrictions on
7 turbine selection: and may select one of two turbine types: the GE 1.5-megawatt wind
8 turbine or the Vestas V82 1.65-megawatt wind turbine.

9 (a) For any turbine string, the certificate holder may select any combination of GE 1.5-
10 megawatt or Vestas V82 1.65-megawatt wind turbines.

11 (b) For turbine strings K, L, M, N, R, S, U, V, W and X as identified in Table 1 of the
12 Final Order on Amendment #1, in addition to the turbine types listed in (a), the certificate
13 holder may select any turbine type such that the hub height does not exceed 80 meters,
14 the rotor diameter does not exceed 92.5 meters, the peak generating capacity does not
15 exceed 2.4 megawatts and the maximum sound power level does not exceed 107 dBA.

16 (c) Notwithstanding the restriction described in (b) and in addition to the turbine types
17 listed in (a), the certificate holder may select any turbine type for location K-02 as shown
18 on Figure B-1 as described in the Final Order on Amendment #1, such that the hub height
19 does not exceed 80 meters, the rotor diameter does not exceed 92.5 meters, the peak
20 generating capacity does not exceed 2.4 megawatts and the maximum sound power level
21 does not exceed 110 dBA.

22 (d) Before beginning construction, the certificate holder shall identify all turbine types
23 selected for the project and provide evidence satisfactory to the Department that the
24 selected turbine types comply with this condition.

25 [Amendment #1]

Explanation

26 This revision modifies Condition 28 to allow construction and operation of larger
27 turbines on the strings that were analyzed for larger turbines in the amendment request.

28 The current condition language allows construction and operation of either the GE 1.5-
29 megawatt or the Vestas V82 1.65-megawatt wind turbine but requires the certificate holder to
30 use only one turbine type. KIII has requested the flexibility to use a combination of the GE
31 and Vestas turbines, and the Council approves an amendment of the site certificate to allow
32 this, as expressed in subsection (a) of the revised language.

33 Subsection (b) would give the certificate holder the option of using larger turbines on
34 turbine strings K, L, M, N, R, S, U, V, W and X, subject to limits on physical size, generating
35 capacity and sound level. Subsection (c) increases the allowed sound level at one specified
36 turbine location. These subsections address the certificate holder's request for authorization to
37 use larger turbines than currently permitted under the site certificate.

38 Subsection (d) requires the certificate holder to identify the turbine types that are
39 selected for construction and to provide verification to the Department that the turbines have
40 characteristics within the limits of this condition.

Revision 9

Page 10, lines 22-37:

(31) Before beginning construction and after considering all micrositing factors, the certificate holder shall provide to the Department a detailed map of the proposed facility, showing the final locations where facility components are proposed to be built in relation to the 300-foot and 900-foot corridors having centerlines defined by the endpoints shown on Table 1 of the Final Order on Amendment #1 shown on Figures P-1 through P-6 of the site certificate application (as revised March 1, 2006). In accordance with Condition (2), the certificate holder must submit a legal description of the site to the Department. For the purposes of this site certificate, the term “legal description” means a description of location by reference to a map and geographic data that clearly and specifically identifies the physical location of all parts of the facility. Notwithstanding OAR 345-027-0020(2), for the purposes of this site certificate, construction of parts of a wind facility within micrositing corridors is comparable to construction of pipelines or transmission lines within Council-approved corridors as described in OAR 345-027-0023(6). Before beginning operation of the facility, the certificate holder shall submit to the Department a legal description for those parts of the facility constructed within micrositing corridors. The final site of the facility includes the final turbine site corridors and other facility components as described in the Final Order on Amendment #1 final order on the site certificate application and in this site certificate. [Amendment #1]

Explanation

This revision modifies Condition 31. The 300-foot-wide and 900-foot-wide corridors are described in the current site certificate by reference to “Figures P-1 through P-6 (as revised March 1, 2006).” The revision cross-references Table 1 for the description of the corridors. The table is more precise in defining the corridors, and it is more readily accessible than the March 1, 2006, version of Figures P-1 through P-6.

The purpose of identifying final locations relative to 300-foot-wide corridors is to determine whether construction would occur outside of the 300-foot survey corridor for waters of the state described on page 100 of the Final Order on the Application or the 264-foot cultural resource survey corridors described on page 88 of that order. This information is necessary to determine compliance with Conditions 79 and 48.

Revision 10

Page 10, lines 38-43, and page 11, lines 1-31:

(32) Before beginning construction, the certificate holder shall submit to the State of Oregon through the Council a bond or letter of credit ~~in the amount of \$2.201 million (in 2005 dollars)~~ naming the State of Oregon, acting by and through the Council, as beneficiary or payee. The initial bond or letter of credit amount is \$1.089 million (2005 dollars) adjusted to the date of issuance as described in (b) or the amount determined as described in (a). The certificate holder shall adjust the amount of the bond or letter of credit on an annual basis thereafter as described in (b). Notwithstanding the adjustments described in (a) and (b), the minimum bond or letter of credit amount is \$500,000.

(a) The certificate holder may adjust the amount of the initial bond or letter of credit based on the final design configuration of the facility by applying the unit costs and general costs shown in Table 3 of the Final Order on Amendment #1 to the final design and calculating the financial assurance amount as described in that order, adjusted to the date of issuance as described in (b) and subject to approval by the Department.

1 (ab) The certificate holder shall adjust the amount of the bond or letter of credit
2 ~~annually~~, using the following calculation and subject to approval by the Department:

3 (i) Adjust the gross cost component of the initial bond or letter of credit
4 ~~amount \$7,098,773 (2005 dollars)~~ to present value, using the U.S. Gross Domestic
5 Product Implicit Price Deflator, Chain-Weight, as published in the Oregon
6 Department of Administrative Services' "Oregon Economic and Revenue Forecast" or
7 by any successor agency (the "Index") and using the annual average index value for
8 2005 dollars and the quarterly index value for the date of issuance of the new bond or
9 letter of credit. If at any time the Index is no longer published, the Council shall select
10 a comparable calculation to adjust 2005 dollars to present value.

11 (ii) Adjust the estimated scrap value by an index factor derived from the Producer
12 Price Index values, not seasonally adjusted, reported by the U.S. Department of Labor,
13 Bureau of Labor Statistics, "Commodities: Metals and metal Products: Carbon steel
14 scrap" (Series ID: WPU101211). Using the average monthly index value for the 12
15 months ending with December of the year preceding the year in which the adjustment
16 is made as the numerator and the average monthly index value for the 12 months
17 ending with December 2005 (277.2) as the denominator, multiply the estimated scrap
18 value of \$149 per ton (2005 dollars) by the resulting factor. If at any time the Producer
19 Price Index Values are no longer published, the Council shall select a comparable
20 calculation to adjust the estimated scrap value.

21 (iii) Multiply the adjusted scrap value (ii) per ton by ~~36,367.65~~ the number of tons
22 used to calculate the scrap value component of the initial bond or letter of credit
23 amount and subtract the resulting value from the adjusted gross cost (i).

24 (iv) Add 1 percent of the subtotal (iii) for the adjusted performance bond amount,
25 10 percent of the subtotal (iii) for the adjusted administration and project management
26 costs, and 20 percent of the subtotal (iii) for the adjusted future developments
27 contingency.

28 (v) Add the subtotal (iii) to the sum of percentages (iv) and round the resulting
29 total to the nearest \$1,000 to determine the adjusted financial assurance amount for
30 the reporting year.

31 ~~(bc)~~ The certificate holder shall use a form of bond or letter of credit approved by the
32 Council.

33 ~~(ed)~~ The certificate holder shall use an issuer of the bond or letter of credit approved by
34 the Council.

35 ~~(de)~~ The certificate holder shall describe the status of the bond or letter of credit in the
36 annual report submitted to the Council under Condition (22).

37 ~~(ef)~~ The bond or letter of credit shall not be subject to revocation or reduction before
38 retirement of the facility site.

39 [Amendment #1]

Explanation

40 This revision modifies Condition 32 to change the financial assurance amount (in
41 2005 dollars) from \$2.201 million to \$1.089 million based on the estimate of site restoration
42 costs discussed herein. New language clarifies that the financial assurance amount must be
43 adjusted to the date of issuance of the bond or letter of credit.

44 The financial assurance amount of \$1.089 million is based on a "worst-case" analysis.
45 New subsection (a) would allow the certificate holder to reduce the initial financial assurance
46 amount based on the final design configuration of the facility, subject to a minimum of
47 \$500,000.

1 The changes to subsection (b) require adjustments to be made subject to Department
2 approval and clarify which index values are to be used in making the adjustments. In addition,
3 the scrap value adjustment is to be determined by the number of tons used in computing the
4 initial financial assurance amount, which could vary depending on the final turbine selection.
5 Annual adjustment is subject to the minimum financial assurance amount of \$500,000.

Revision 11

6 *Page 12, lines 37-40, and page 13, lines 1-2:*

7 (43) The certificate holder shall locate aboveground transmission lines, junction boxes, access
8 roads and temporary construction laydown and staging areas to minimize disturbance
9 with farming practices and, wherever feasible, shall place turbines and transmission
10 interconnection lines along the margins of cultivated areas to reduce the potential for
11 conflict with farm operations. The certificate holder shall place aboveground
12 transmission lines and junction boxes along public road rights-of-way to the extent
13 practicable. The certificate holder shall place underground transmission lines and
14 supervisory, control and data acquisition (SCADA) system cables at least 36 inches
15 below the surface of the ground. [Amendment #1]

Explanation

16 This revision amends Condition 43 to ensure that all underground transmission lines
17 and SCADA lines are buried at least 36 inches below grade to avoid interference with farm
18 operations. If the site is restored, underground lines that are at least 36 inches below grade
19 could be left in place consistent with the retirement standard, OAR 345-022-0050.

Revision 12

20 *Page 13, lines 18-29:*

21 (48) Before beginning construction, the certificate holder shall provide to the Department a
22 map showing the final design locations of all components of the facility and areas that
23 would be temporarily disturbed during construction and also showing the areas that
24 Archaeological Investigations Northwest, Inc. (AINW) surveyed in 2005 and 2006, as
25 described in the site certificate application and the Request for Amendment #1. If the
26 final design of the facility could result in ground disturbance at specific resource sites or
27 within high-probability areas identified by AINW in the June 2006 report, the~~The~~
28 certificate holder shall hire qualified personnel to conduct the resurvey or test
29 excavations recommended by AINW in that report. In addition, the certificate holder
30 shall hire qualified personnel to conduct field investigation of all areas of permanent or
31 temporary disturbance that AINW did not previously survey. The certificate holder and
32 shall provide a written report of the surveys, excavations and field investigation to the
33 Department and to the State Historic Preservation Office (SHPO). If any significant
34 historic, cultural or archaeological resources are found during the field investigation and
35 are determined significant by the SHPO, the certificate holder shall ensure that
36 construction and operation of the facility will have no impact on the resources. The
37 certificate holder shall instruct all construction personnel to avoid the areas where the
38 resources were found and shall implement other appropriate measures to protect the
39 resources. [Amendment #1]

Explanation

1 As proposed by KIII, this revision of Condition 48 includes a reference to the June
2 2006 survey conducted by AINW. In addition, other changes to the condition incorporate the
3 recommendations made by AINW as a result of that survey. Based on comments by the
4 SHPO, the revised condition language requires a determination by the SHPO regarding the
5 significance of any historical, cultural or archaeological finds.

Revision 13

6 The Council adopts revisions to the Revegetation Plan, which is incorporated by
7 reference in Condition 81 of the site certificate. The revisions are shown in Attachment B.

Explanation

8 On page B-1, in lines 6-10 and in footnote 2, the description of the areas of temporary
9 and permanent disturbance are changed. These revisions are consistent with the increased area
10 of temporary and permanent disturbance as shown in Table 5 of this order.

Revision 14

11 *Page 17, lines 39-42, and page 18, lines 1-4:*

12 (84) The certificate holder shall install the 34.5-kV collector system underground to the extent
13 practical. Where geotechnical conditions or other engineering considerations require, the
14 certificate holder may install segments of the collector system aboveground in developed
15 or agricultural areas that are Category 6 habitat, but the total length of aboveground
16 segments must not exceed ~~5.5~~12 miles. The certificate holder shall construct
17 aboveground segments of the collector system using single or double circuit monopole
18 design as described in the site certificate application and shall not locate any
19 aboveground segments within 200 feet of any existing residence. [Amendment #1]

Explanation

20 This revision amends Condition 84 as proposed by KIII. Under the amendment, up to
21 12 miles of aboveground collector line would be allowed.

Revision 15

22 (88) The certificate holder shall take reasonable steps to reduce or manage human exposure to
23 electromagnetic fields, including but not limited to:

24 ~~(a) Constructing the 230 kV transmission line to ensure that conductors have a~~
25 ~~minimum clearance of 30 feet from the ground at mid-span under maximum sag~~
26 ~~conditions.~~

27 ~~(a)(b)~~ Constructing aboveground segments of the 34.5-kV transmission line to ensure
28 that conductors have a minimum clearance of 25 feet from the ground at mid-span under
29 maximum sag conditions.

30 ~~(b)(e)~~ Constructing underground segments of the 34.5-kV transmission line at least 36-
31 inches below the surface of the ground.

32 ~~(c)(d)~~ Providing to landowners a map of underground and overhead transmission lines
33 on their property and advising landowners of possible health risks.

34 [Amendment #1]

Explanation

1 This revision modifies Condition 88 by deleting subparagraph (a). The certificate
2 holder has eliminated the 230-kV transmission line from the design of the facility.

Revision 16

3 *Page 19, lines 5-23:*

4 (92) The certificate holder may construct turbines and other facility components within the
5 900-foot corridors having centerlines defined by the endpoints shown on Table 1 of the
6 Final Order on Amendment #1 shown on Figures P-1 through P-6 of the site certificate
7 application (as revised March 1, 2006), subject to the following requirements addressing
8 potential habitat impact and subject to the requirements of Condition 102:

9 (a) The certificate holder shall not construct any facility components within areas of
10 Category 1 habitat and shall avoid temporary disturbance of Category 1 habitat.

11 (b) The certificate holder shall design and construct facility components that are the
12 minimum size needed for safe operation of the energy facility.

13 (c) To the extent possible, the certificate holder shall construct facility components in
14 the locations shown on Figure C-2 of the site certificate application.

15 (d) If the certificate holder must change the layout of facility components from what
16 is shown on Figure C-2 due to micro-siting considerations, the certificate holder shall, to
17 the extent possible, construct facility components within the 300-foot corridors having
18 centerlines defined by the endpoints shown on Table 1 of the Final Order on Amendment
19 #1 shown on Figures P-1 through P-6 of the site certificate application (as revised March
20 1, 2006).

21 (e) The certificate holder may construct facility components outside the 300-foot
22 corridors if necessary due to micro-siting considerations, except that the certificate holder
23 shall not construct any facility components outside the 900-foot corridors having
24 centerlines defined by the endpoints shown on Table 1 of the Final Order on Amendment
25 #1 shown on Figures P-1 through P-6 of the site certificate application (as revised March
26 1, 2006) or cause any temporary disturbance outside those 900-foot corridors.

27 [Amendment #1]

Explanation

28 This revision of Condition 92 cross-references Table 1 for the description of the
29 previously-approved turbine micro-siting corridors. The table is more precise in defining the
30 corridors, and it is more readily accessible than the March 1, 2006, version of Figures P-1
31 through P-6.

32 The cross-reference to Condition 102 is needed because the turbines in the J-string
33 must be built in the locations shown in Table 7 to ensure compliance with the noise regulation
34 if a noise waiver is not obtained. See further discussion at page 46 above.

35 The Council does not adopt the other changes to this condition as proposed by the
36 certificate holder (see page 5). The changes that would be allowed if Amendment #1 were
37 approved should not affect the findings upon which the Council based the requirements of
38 Condition 92, which are discussed on page 79 of the Final Order on the Application.

Revision 17

1 The Council adopts revisions to the Wildlife Monitoring and Mitigation Plan, which is
2 incorporated by reference in Condition 95 of the site certificate. The revisions are shown in
3 Attachment A.

Explanation

4 On page A-1, line 4, of the Wildlife Monitoring and Mitigation Plan, the phrase “up
5 to” is inserted to indicate that the number of turbines that could be built under the amendment
6 would be a maximum of 165 but could be fewer if larger turbines are built.

7 On page A-2, the description of “Search Plots” is revised. The dimensions of search
8 plots would vary, depending on the blade tip height of the turbine within a given search plot.
9 The revised language, in addition, corrects an error in the current language, which described
10 circular plots as having a “radius” of 242 meters when “diameter” was intended.

11 On pages A-2 and A-3, the description of “Sample Size” is revised. The revision sets a
12 baseline sample size of one-third of the total number of turbines (per year for two years of
13 fatality monitoring). This is what is required under the current site certificate. Under the
14 amendment, the certificate holder would be allowed to construct a facility using turbines in
15 two different size classes. The revision provides for comparing the two classes to determine
16 whether there is a significant difference in fatality rates, if a sufficient number of turbines in
17 each size class are built. If there is a sufficient sample size, the certificate holder would
18 compare fatality rates for the “all birds” category. The total number of turbines at the KWP is
19 insufficient to compare fatality rates in the sub-categories of avian and bat species (small
20 birds, large birds, raptors, grassland birds, nocturnal migrants, State Sensitive Species and
21 bats).

Revision 18

22 The Council adopts revisions to the Habitat Mitigation Plan, which is incorporated by
23 reference in Condition 97 of the site certificate. The revisions are shown in Attachment C.

Explanation

24 On page C-1 of the Habitat Mitigation Plan, the estimated total acres of permanent
25 disturbance is increased from 64 acres to 71 acres and the estimated acres of permanent
26 disturbance within currently cultivated agricultural fields is increased from 56 to 63 acres.
27 These changes are consistent with the increased area of permanent disturbance as shown on
28 Table 5 of this order. The phrase “based on a worst-case estimate” has been inserted in line 15
29 to clarify that the acreage estimates are hypothetical and assume turbine placement such that
30 the maximum area of higher-value habitat would be affected.

Revision 19

31 *Page 21, lines 17-42.*

32 (102) Before beginning construction, the certificate holder shall present information
33 demonstrating to the satisfaction of the Department that the requirements of either (a), or
34 (b) or (c) have been met at ~~properties R3, R4, property R5, R6 and R7~~ (as shown on the
35 Noise Buffer and Receptor Locations map in the Application Supplement, Tab X, Item
36 vi):

1 (a) The certificate holder has obtained a legally effective easement or real covenant
2 pursuant to which the owner of the property authorizes the certificate holder's operation
3 of the facility to increase ambient statistical noise levels L_{10} and L_{50} by more than 10 dBA
4 at the appropriate measurement point. A legally effective easement or real covenant shall:
5 include a legal description of the burdened property (the noise sensitive property); be
6 recorded in the real property records of the county; expressly benefit the certificate
7 holder; expressly run with the land and bind all future owners, lessees or holders of any
8 interest in the burdened property; and not be subject to revocation without the certificate
9 holder's written approval.

10 (b) If the certificate holder has not obtained a legally effective easement or real
11 covenant as described in (a) and has not met the requirements of (c), the certificate holder
12 shall not construct turbines F-05, F-06, F-07, F-08 and J-01 as shown on Figure B-1
13 described in the Final Order on Amendment #1, shall construct turbines F-01, F-02, F-03
14 and F-04 within the approved micro-siting corridor at least 7,990 feet away from R5 and
15 shall construct turbines J-02 through J-13 in the locations specified in Table 7 of the Final
16 Order on Amendment #1.

17 (c) ~~For any property for which~~ If the certificate holder has not obtained a legally
18 effective easement or real covenant as described in (a), the certificate holder may, instead
19 of meeting the requirements of (b), identify the final design locations of all
20 turbines to be built in the F and J strings and perform a noise analysis, in
21 accordance with OAR 340-035-0035(1)(b)(B)(iii)(IV), demonstrating that the total noise
22 generated by the facility would meet the ambient degradation test at the appropriate
23 measurement point when all turbines are placed in their final design locations. The
24 certificate holder shall perform the noise analysis using the Sound Propagation Model for
25 Outdoor Noise Sources (SPM 9613, Version 2) and shall assume the following input
26 parameters:

- 27 (i) The maximum sound power level guaranteed by the manufacturer.
- 28 (ii) Temperature of 52° F (11° C).
- 29 (iii) Relative humidity of 70 percent.
- 30 (iv) No ground effect.
- 31 (v) No barrier effects.

32 [Amendment #1]

Explanation

33 Properties R3, R4, R6 and R7 are removed from Condition 102 because the certificate
34 holder has obtained noise waivers from the affected property owners. The certificate holder
35 has performed a noise analysis demonstrating that the ambient degradation test would be met
36 at R5 if the F and J strings are built subject to the restrictions described in (b). As an
37 alternative, the revision allows the certificate holder to determine the final design locations of
38 turbines in the F and J strings and provide a noise analysis meeting the requirements of (c)
39 and demonstrating to the satisfaction of the Department that noise levels at R5 would not
40 exceed the ambient degradation limit. The requirements of the applicable noise control
41 regulations in OAR 340-035-0035 would be met if the certificate holder obtains a satisfactory
42 noise waiver, complies with the restrictions of (b) or provides a satisfactory noise analysis
43 based on final turbine locations as described in (c).

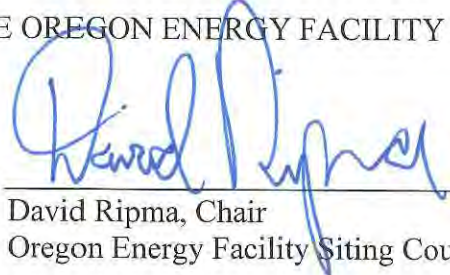
VIII. ORDER

- 1 The Council approves Amendment #1 and issues an amended site certificate for the
- 2 Klondike III Wind Project, subject to the terms and conditions set forth above.

Issued this 3rd day of November, 2006.

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.

Klondike III Wind Project: Wildlife Monitoring and Mitigation Plan

[NOVEMBER 3, 2006]

1 This plan describes wildlife monitoring that the certificate holder shall conduct during
2 operation of the Klondike III Wind Project (KWP).¹ The monitoring objectives are to determine
3 whether the facility causes significant fatalities of birds and bats and to determine whether the
4 facility results in a loss of habitat quality. The KWP facility consists of up to 165 wind turbines,
5 three non-guyed meteorological towers and other related or supporting facilities as described in
6 the site certificate.

7 The certificate holder shall use experienced personnel to manage the monitoring required
8 under this plan and properly trained personnel to conduct the monitoring, subject to approval by
9 the Oregon Department of Energy (Department) as to professional qualifications. For all
10 components of this plan except PPM Energy's Klondike III Wind Project Wildlife Reporting and
11 Handling System, the certificate holder shall hire an independent third party (not employees of
12 the certificate holder) to perform monitoring tasks.

13 The Wildlife Monitoring and Mitigation Plan for the Klondike III Wind Project has the
14 following components:

- 15 1) Fatality monitoring program including:
 - 16 a) Removal trials
 - 17 b) Searcher efficiency trials
 - 18 c) Fatality search protocol
 - 19 d) Statistical analysis
- 20 2) Raptor nesting surveys
- 21 3) Avian use surveys
- 22 4) PPM Energy's Klondike III Wind Project Wildlife Reporting and Handling
23 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 KWP 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.

Klondike III Wildlife Monitoring and Mitigation Plan
[NOVEMBER 3, 2006]

1 **1. Fatality Monitoring**

2 (a) Definitions and Methods

3 Seasons

4 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

5 Search Plots

6 The certificate holder shall conduct fatality monitoring within search plots. The
7 certificate holder, in consultation with the Oregon Department of Fish and Wildlife (ODFW),
8 shall select search plots based on a systematic sampling design that ensures that the selected
9 search plots are representative of the habitat conditions in different parts of the site. Each search
10 plot will contain one turbine. Search plots will be square or circular. Circular search plots will be
11 centered on the turbine location and will have a radius equal to the maximum blade tip height of
12 the turbine contained within the plot. "Maximum blade tip height" is the turbine hub-height plus
13 one-half the rotor diameter. Square search plots will be of sufficient size to contain a circular
14 search plot as described above. The certificate holder shall provide maps of the search plots to
15 the Department before beginning fatality monitoring at the facility. The certificate holder shall
16 use the same search plots for each search conducted during a monitoring year.

17 Scheduling

18 In each monitoring year, the certificate holder shall conduct fatality monitoring searches
19 at the rates of frequency shown below. Over the course of one monitoring year, the certificate
20 holder would conduct 16 searches, 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)

21 Sample Size

22 The sample size for fatality monitoring is the number of turbines searched per monitoring
23 year. During each monitoring year, the certificate holder shall search a minimum of one-third of
24 the total number of turbines that are built.

25 As described in the site certificate, the certificate holder may choose to build the KWP
26 using turbine types in two size classes:

- 27 • Small: turbines having a rotor diameter of 82 meters or less
- 28 • Large: turbines having a rotor diameter greater than 82 meters

Klondike III Wildlife Monitoring and Mitigation Plan
[NOVEMBER 3, 2006]

1 If the final design of the KWP includes both small and large turbines, the certificate
2 holder shall, at a minimum, sample one-third of the total number of turbines in each monitoring
3 year. Before beginning fatality monitoring, the certificate holder shall consult with an
4 independent expert with experience in statistical analysis of avian fatality data to determine
5 whether it would be possible to sample a sufficient number of the KWP turbines in each size
6 class to allow a statistical comparison of fatality rates for all birds as a group. The certificate
7 holder shall submit the expert's written conclusions to the Department. If sampling of one-third
8 of the total number of all turbines in each monitoring year would provide a sufficient number of
9 turbines in each size class to allow the comparison, the certificate holder will sample the
10 appropriate number of turbines from each class and conduct the analysis. The certificate holder
11 may choose to sample more than one-third of the total number of all turbines in each monitoring
12 year to allow the comparison.

13 (b) Removal Trials

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

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

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

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

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

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

12 (c) Searcher Efficiency Trials

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

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

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

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

41 Efficiency trials will be spread over the entire season to incorporate effects of varying
42 weather and vegetation growth. Carcasses will be placed in a variety of postures to simulate a

Klondike III Wildlife Monitoring and Mitigation Plan
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1 range of conditions. For example, birds will be: 1) placed in an exposed posture (thrown over the
2 shoulder), 2) hidden to simulate a crippled bird and 3) partially hidden.

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

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

10 (d) Coordination with the Biglow Canyon Wind Farm

11 The proposed Biglow Canyon Wind Farm lies to the north of the Klondike III Wind
12 Power Project on similar terrain and habitat. If the Council approves site certificates for both
13 facilities and requires similar wildlife monitoring, coordination of removal trials and searcher
14 efficiency trials would be possible. Subject to the approval of both certificate holders and the
15 Department, the number of trials at each site and the number of trial carcasses used at each site
16 can be reduced by combining the removal data and efficiency data from both projects, if the
17 certificate holder can demonstrate that the calculation of fatality rates would continue to have
18 statistical validity for both facilities and that combining the data would not affect any other
19 requirements of the monitoring plans for either facility.

20 (e) Fatality Monitoring Search Protocol

21 The objective fatality monitoring is to estimate the number of bird and bat fatalities that
22 are attributable to facility operation. The goal of bird and bat fatality monitoring is to obtain a
23 precise estimate of the fatality rate and associated variances. The certificate holder shall conduct
24 fatality monitoring using standardized carcass searches. The certificate holder shall conduct
25 fatality monitoring for two years (32 searches), beginning one month after the start of
26 commercial operation of the KWP.

27 The certificate holder shall use a worst-case analysis to resolve any uncertainty in the
28 results and to determine whether the data indicate that additional mitigation should be
29 considered. The Department may require additional, targeted monitoring if the data indicate the
30 potential for significant impacts that cannot be addressed by worst-case analysis and appropriate
31 mitigation. On an annual basis, the certificate holder shall report an estimate of fatalities in seven
32 categories: 1) all birds, 2) small birds, 3) large birds, 4) raptors, 5) grassland birds, 6) nocturnal
33 migrants, 7) State Sensitive Species listed under OAR 635-100-0040 and 8) bats. If there is
34 sufficient sampling of large and small turbines, the certificate holder shall compare the fatality
35 rates in the "all birds" category for each of the turbine size classes. The certificate holder shall
36 calculate fatality rates using the statistical methods described in Section (f).

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

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1 Personnel trained in proper search techniques (“the searchers”) will conduct the carcass
2 searches by walking parallel transects within the search plots.² Transects will be initially set at 6
3 meters apart in the area to be searched. A searcher will walk at a rate of approximately 45 to 60
4 meters per minute along each transect searching both sides out to three meters for casualties.
5 Search area and speed may be adjusted by habitat type after evaluation of the first searcher
6 efficiency trial. The searchers will record the condition of each carcass found, using the
7 following condition categories:

- 8 ■ Intact – a carcass that is completely intact, is not badly decomposed and shows no
9 sign of being fed upon by a predator or scavenger
- 10 ■ Scavenged – an entire carcass that shows signs of being fed upon by a predator or
11 scavenger, or portions of a carcass in one location (e.g., wings, skeletal remains,
12 legs, pieces of skin, etc.)
- 13 ■ Feather Spot – 10 or more feathers at one location indicating predation or
14 scavenging or 2 or more primary feathers

15 All carcasses (avian and bat) found during the standardized carcass searches will be
16 photographed, recorded and labeled with a unique number. Each carcass will be bagged and
17 frozen for future reference and possible necropsy. A copy of the data sheet for each carcass will
18 be kept with the carcass at all times. For each carcass found, searchers will record species, sex
19 and age when possible, date and time collected, location, condition (e.g., intact, scavenged,
20 feather spot) and any comments that may indicate cause of death. Searchers will photograph each
21 carcass as found and will map the find on a detailed map of the search area showing the location
22 of the wind turbines and associated facilities. The certificate holder shall coordinate collection of
23 state endangered, threatened or protected species with ODFW. The certificate holder shall
24 coordinate collection of federal endangered, threatened or protected species with the U.S. Fish
25 and Wildlife Service (USFWS). The certificate holder shall obtain appropriate collection permits
26 from ODFW and USFWS.

27 The searchers might discover carcasses incidental to formal carcass searches (e.g., while
28 driving within the project area). For each incidentally discovered carcass, the searcher shall
29 identify, photograph, record data and collect the carcass as would be done for carcasses within
30 the formal search sample during scheduled searches. If the incidentally discovered carcass is
31 found within a formal search plot, the fatality data will be included in the calculation of fatality
32 rates. If the incidentally discovered carcass is found outside a formal search plot, the data will be
33 reported separately. The certificate holder shall coordinate collection of incidentally discovered
34 state endangered, threatened or protected species with ODFW. The certificate holder shall
35 coordinate collection of incidentally discovered federal endangered, threatened or protected
36 species with the USFWS.

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

² Where search plots are adjacent, the search area may be rectangular.

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1 (f) Statistical Methods for Fatality Estimates

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

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

10 Definition of Variables

11 The following variables are used in the equations below:

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

³ If a different cause of death is not apparent, the fatality will be attributed to facility operation.

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1 Observed Number of Carcasses

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

3
$$\bar{c} = \frac{\sum_{i=1}^n c_i}{k} . \tag{1}$$

4

5 Estimation of Carcass Removal

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

8
$$\bar{t} = \frac{\sum_{i=1}^s t_i}{s - s_c} . \tag{2}$$

9 This estimator is the maximum likelihood estimator assuming the removal times follow an
10 exponential distribution and there is right-censoring of data. Any trial carcasses still remaining at
11 40 days are collected, yielding censored observations at 40 days. If all trial carcasses are
12 removed before the end of the trial, then s_c is 0, and \bar{t} is just the arithmetic average of the
13 removal times. Removal rates will be estimated by carcass size (small and large) and season.

14 Estimation of Observer Detection Rates

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

18 Estimation of Facility-Related Fatality Rates

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

20
$$m_t = \frac{\bar{c}}{\hat{\pi}} , \tag{3}$$

21 where $\hat{\pi}$ includes adjustments for both carcass removal (from scavenging and other means) and
22 observer detection bias assuming that the carcass removal times t_i follow an exponential
23 distribution. Under these assumptions, this detection probability is estimated by:

24
$$\hat{\pi} = \frac{\bar{t} \cdot p}{I} \cdot \left[\frac{\exp\left(\frac{I}{\bar{t}}\right) - 1}{\exp\left(\frac{I}{\bar{t}}\right) - 1 + p} \right] . \tag{4}$$

25

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

2
$$m = \frac{m_i}{C} \tag{5}$$

3 The certificate holder shall calculate fatality estimates for: (1) all birds, (2) small birds,
 4 (3) large birds, (4) raptors, (5) grassland birds, (6) nocturnal migrants 7) State Sensitive Species
 5 listed under OAR 635-100-0040 and 8) bats. If there is sufficient sampling of large and small
 6 turbines, the certificate holder shall compare the fatality rates in the “all birds” category for each
 7 of the turbine size classes. The final reported estimates of m , associated standard errors and 90%
 8 confidence intervals will be calculated using bootstrapping (Manly 1997). Bootstrapping is a
 9 computer simulation technique that is useful for calculating point estimates, variances and
 10 confidence intervals for complicated test statistics. For each iteration of the bootstrap, the plots
 11 will be sampled with replacement, trial carcasses will be sampled with replacement and \bar{c} , \bar{i} , p ,
 12 $\hat{\pi}$ and m will be calculated. A total of 5,000 bootstrap iterations will be used. The reported
 13 estimates will be the means of the 5,000 bootstrap estimates. The standard deviation of the
 14 bootstrap estimates is the estimated standard error. The lower 5th and upper 95th percentiles of the
 15 5000 bootstrap estimates are estimates of the lower limit and upper limit of 90% confidence
 16 intervals.

17 Nocturnal Migrant and Bat Fatalities

18 Differences in observed nocturnal migrant and bat fatality rates for lit turbines, unlit
 19 turbines that are adjacent to lit turbines and unlit turbines that are not adjacent to lit turbines will
 20 be compared graphically and statistically.

21 (g) Mitigation

22 Mitigation may be appropriate if fatality rates exceed a “threshold of concern.” For the
 23 purpose of determining whether a threshold has been exceeded, the certificate holder shall
 24 calculate the average annual fatality rates for species groups after two years of monitoring. Based
 25 on current knowledge of the species that are likely to use the habitat in the area of the facility, the
 26 following thresholds apply to the Klondike III facility:

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
Grassland species (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.)	0.2

27 If the data show that a threshold of concern for a species group has been exceeded, the
 28 certificate holder shall implement additional mitigation if the Department determines that

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1 mitigation is appropriate based on analysis of the data, consultation with ODFW and
2 consideration of any other significant information available at the time. In addition, mitigation
3 may be appropriate if the Department determines that fatality rates for individual avian or bat
4 species (especially State Sensitive Species) are higher than expected and at a level of biological
5 concern. If mitigation is appropriate, the certificate holder, in consultation with the Department
6 and ODFW, shall propose mitigation measures designed to benefit the affected species. The
7 certificate holder shall implement mitigation as approved by the Council. The Department may
8 recommend additional, targeted data collection if the need for mitigation is unclear based on the
9 information available at the time. The certificate holder shall implement such data collection as
10 approved by the Council.

11 Mitigation should be designed to benefit the affected species group. Mitigation may
12 include, but is not limited to, protection of nesting habitat for the affected group of native species
13 through a conservation easement or similar agreement. Tracts of land that are intact and
14 functional for wildlife are preferable to degraded habitat areas. Preference should be given to
15 protection of land that would otherwise be subject to development or use that would diminish the
16 wildlife value of the land. In addition, mitigation measures might include: enhancement of the
17 protected tract by weed removal and control; increasing the diversity of native grasses and forbs;
18 planting sagebrush or other shrubs; constructing and maintaining artificial nest structures for
19 raptors; improving wildfire response; and local research that will aid in understanding more
20 about the species and conservation needs. In considering whether additional mitigation is
21 appropriate for bat fatalities, the Department will take into account the mitigation that the
22 certificate holder has already implemented under Condition 96 of the site certificate (a
23 contribution of \$10,000 per year for three years, beginning in the first year of operation, to fund
24 research toward better understanding wind facility impacts to bats and to develop mitigation
25 solutions).

26 **2. Raptor Nest Surveys**

27 The objectives of raptor nest surveys are to estimate the size of the local breeding
28 populations of tree or other above-ground-nesting raptor species in the vicinity of the facility and
29 to determine whether operation of the facility results in a reduction of nesting activity or nesting
30 success in the local populations of the following raptor species: Swainson's hawk, golden eagle
31 and ferruginous hawk.

32 **(a) Survey Protocol**

33 For the species listed above, aerial and ground surveys will be used to gather nest success
34 statistics on active nests, nests with young and young fledged. The certificate holder will share
35 the data with state and federal biologists. The certificate holder will conduct two years of post-
36 construction raptor nest surveys. One year of surveys will be done in the first nesting season after
37 construction is completed. The second year of surveys will be done in the fourth year after
38 construction is completed.

39 During each monitoring year, the certificate holder will conduct a minimum of one
40 helicopter survey in late May or early June and additional surveys as described in this section.
41 All nests discovered during pre-construction surveys and any nests discovered during post-
42 construction surveys, whether active or inactive, will be given identification numbers. Nest
43 locations will be recorded on U.S. Geological Survey 7.5-minute quadrangle maps. Global

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1 positioning system coordinates will be recorded for each nest. Locations of inactive nests will be
2 recorded as they may become occupied during future years.

3 The certificate holder shall conduct the aerial surveys within the Klondike III site and a
4 2-mile buffer around the turbines to determine nest occupancy. Determining nest *occupancy* will
5 likely require two helicopter visits to each nest. For occupied nests, the certificate holder shall
6 determine nesting *success* by a minimum of one ground visit to determine species, number of
7 young and nesting success. "Nesting success" means that the young have successfully fledged
8 (the young are independent of the core nest site). Nests that cannot be monitored due to the
9 landowner denying access will be checked from a distance where feasible.

10 (b) Mitigation

11 The certificate holder shall analyze the raptor nesting data collected after two monitoring
12 years to determine whether a reduction in either nesting success or nest use has occurred in the
13 vicinity of the Klondike III facility. If the analysis indicates a reduction in nesting success by
14 Swainson's hawk, golden eagle or ferruginous hawk within 2 miles of the facility, then the
15 certificate holder shall propose appropriate mitigation and shall implement mitigation as
16 approved by the Council. At a minimum, if the analysis shows that any of these species has
17 abandoned a nest territory within ½ mile of the facility or has not fledged any young over the
18 two-year period within a ½ mile of the facility, the certificate holder shall assume the
19 abandonment or unsuccessful fledging is the result of the facility unless another cause can be
20 demonstrated convincingly.

21 Given the very low buteo nesting densities in the area, statistical power to detect a
22 relationship between distance from a wind turbine and nesting parameters (e.g., number of
23 fledglings per reproductive pair) will be very low. Therefore, impacts may have to be judged
24 based on trends in the data, results from other wind energy facility monitoring studies and
25 literature on what is known regarding the populations in the region.

26 If the analysis shows that mitigation is appropriate, the certificate holder shall propose
27 mitigation for the affected species in consultation with the Department and ODFW. Mitigation
28 should be designed to benefit the affected species or contribute to overall scientific knowledge
29 and understanding what stimulates nest abandonment. Mitigation may be designed to proceed in
30 phases over several years. It may include, but is not limited to, additional raptor nest monitoring,
31 protection of natural nest sites from human disturbance or cattle activity (preferably within two
32 miles of the facility) or participation in research projects designed to improve scientific
33 understanding of the needs of the affected species.

34 (c) Long-term Raptor Nest Monitoring and Mitigation Plan

35 In addition to the two years of post-construction raptor nest surveys described in
36 paragraph (a), the certificate holder shall conduct long-term raptor nest surveys at five-year
37 intervals for the life of the facility. The certificate holder shall conduct the first long-term raptor
38 nest survey in the ninth year after construction is completed. In conducting long-term surveys,
39 the certificate holder shall follow the same survey protocol that is described above in paragraph
40 (a) unless the certificate holder proposes an alternative protocol that is approved by the
41 Department. In developing an alternative protocol, the certificate holder shall consult with
42 ODFW and may collaborate with the certificate holder for any other wind energy facility.

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1 The certificate holder shall analyze the long-term survey data as described above in
2 paragraph (b). If the analysis shows that mitigation is appropriate, the certificate holder shall
3 propose mitigation for the affected species in consultation with the Department and ODFW as
4 described in paragraph (b) and shall implement mitigation as approved by the Council. Any
5 reduction in nesting success could be due to operation of the KWP, operation of another wind
6 facility in the vicinity or some other cause. The reduction shall be attributed to the KWP if the
7 wind turbine closest to the affected nest site is a KWP turbine unless the certificate holder
8 demonstrates, and the Department agrees, that the reduction was due to a different cause.

9 **3. Avian Use Surveys**

10 During each fatality monitoring search, observers will record birds detected in a ten-
11 minute period at approximately one-third of the turbines within the fatality monitoring sample
12 using standard variable circular plot point count survey methods. The purpose of observing and
13 recording avian use while conducting the fatality monitoring is to identify additional species that
14 may not have been listed in the original baseline survey report. In addition, avian use surveys
15 provide a basis to evaluate, in general terms, whether the species with the highest fatality
16 numbers are also the most common species at the site.

17 **4. PPM Energy's Klondike III Wind Project Wildlife Reporting and Handling System**

18 PPM Energy's Klondike III Wind Project Wildlife Reporting and Handling System
19 (WRHS) is a monitoring program to search for and handle avian and bat casualties found by
20 maintenance personnel during construction and operation of the facility. A similar system is in
21 place for Klondike I and II. Construction and maintenance personnel will be trained in the
22 methods. This monitoring program includes the initial response, the handling and the reporting
23 of bird and bat carcasses discovered incidental to construction and maintenance operations
24 ("incidental finds").

25 All carcasses discovered by maintenance personnel will be photographed and recorded. If
26 maintenance personnel discover incidental finds at turbines that are not within search plots for
27 the fatality monitoring searches, the data will be reported separately from fatality monitoring
28 data. For such incidental finds, the maintenance personnel will notify a project biologist. The
29 project biologist must be a qualified independent professional biologist who is not an employee
30 of the certificate holder. The project biologist (or the project biologist's experienced wildlife
31 technician) will collect the carcass or will instruct maintenance personnel to have an on-site
32 carcass handling permittee collect the carcass. The certificate holder's on-site carcass handling
33 permittee must be a person who is listed on state and federal scientific or salvage collection
34 permits and who is available to process (collect) the find on the day it is discovered. The find
35 must be processed on the same day as it is discovered.

36 If maintenance personnel discover carcasses within search plots, the data will be included
37 in the calculation of fatality rates. The maintenance personnel will notify a project biologist. The
38 project biologist will collect the carcass or will instruct maintenance personnel to have an on-site
39 carcass handling permittee collect the carcass. As stated above, the on-site permittee must be
40 available to process the find on the day it is discovered. The certificate holder shall coordinate
41 collection of state endangered, threatened or protected species with ODFW. The certificate
42 holder shall coordinate collection of federal endangered, threatened or protected species with the
43 USFWS.

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1 **5. Data Reporting**

2 The certificate holder will report the monitoring data and analysis to the Department.
3 Monitoring data include fatality data, raptor nest survey data, avian use point counts and data on
4 incidental finds by fatality searchers and KWP personnel. The report may be included in the
5 annual report required under OAR 345-026-0080 or may be submitted as a separate document at
6 the same time the annual report is submitted. In addition, the certificate holder shall provide to
7 the Department any data or record generated in carrying out this monitoring plan upon request by
8 the Department.

9 The certificate holder shall notify USFWS and ODFW immediately in the event that any
10 federal or state endangered or threatened species are killed or injured on the facility site.

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

15 **6. Amendment of the Plan**

16 This Wildlife Monitoring and Mitigation Plan may be amended from time to time by
17 agreement of the certificate holder and the Council. Such amendments may be made without
18 amendment of the site certificate. The Council authorizes the Department to agree to
19 amendments to this plan and to mitigation actions that may be required under this plan. The
20 Department shall notify the Council of all amendments and mitigation actions, and the Council
21 retains the authority to approve, reject or modify any amendment of this plan or mitigation action
22 agreed to by the Department.

⁴ 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.

Klondike III Wind Project: Revegetation Plan

[NOVEMBER 3, 2006]

I. Introduction

This plan describes methods and standards for restoration of areas temporarily disturbed during the construction, maintenance or repair of the Klondike III Wind Project (KWP).¹ The objective of revegetation is to restore the temporarily disturbed areas to pre-construction condition or better. Restoration of these areas is required by the site certificate for the facility.

An estimated 223 acres of land will be temporarily affected during construction of the facility.² Approximately 201 acres of the temporarily disturbed area is cultivated or otherwise developed agricultural land and the remainder is grassland, shrub-steppe or CRP.³ The certificate holder shall maintain erosion and sediment control measures put in place during construction until the affected areas are restored as described in this plan and the risk of erosion has been eliminated.

This plan has been prepared to guide the revegetation efforts. Seed mixes, planting methods and weed control techniques have been developed for the project area in consultation with the Oregon Department of Fish and Wildlife (ODFW). The plan specifies monitoring procedures to evaluate revegetation success and recommended remediation if revegetation appears unsuccessful in certain areas.

II. Description of the Project Area

The facility is located in Sherman County, Oregon. The project area is on private agricultural land used primarily for dry land winter wheat production. Soils are typically loess formations of well-drained, moderately permeable, fertile silt loams over basalt. Some areas are used for livestock grazing. Depth to bedrock is generally 20 to 60 inches. The area receives approximately 11 inches of precipitation annually, most of which occurs between October 1 and March 31.

The project area is within the Deschutes-Columbia Plateau physiographic province. Topography within the area is typically gently rolling to level ground with steep slope areas at the northeast and southern margins of the site. Elevation ranges from 1,250 to 1,500 feet. Most of the native vegetation in the project area has been modified by human activities. Very little native plant area exists, occurring predominantly along the plateau margins and steep side slopes of Grass Valley Canyon. Plant communities in these areas consist of sagebrush and rabbitbrush dominated shrub lands and native bunchgrass grasslands, each with varying degrees of invasive species present. CRP areas have been planted with a mix of native and non-native bunch grasses.

III. Revegetation Methods

The certificate holder shall restore areas of temporary disturbance by preparing the soil and seeding using common application methods. The certificate holder shall use mulching and

¹ This plan is incorporated by reference in the site certificate for the KWP 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 In addition to the area permanently occupied by facility structures (approximately 71 acres).

³ "CRP" is formerly cultivated land that the landowner has enrolled in the Conservation Reserve Program.

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1 other appropriate practices to control erosion and sediment during facility construction and
2 during revegetation work. The certificate holder shall restore agricultural topsoil to pre-
3 construction condition. The certificate holder shall select the seed mix to apply based on the pre-
4 construction land use, as described below.

5 **1. Seed Planting Methods**

6 Restoration of temporarily disturbed areas should begin as soon as possible after
7 completion of facility construction, maintenance or repair activity in the area to be restored.
8 Planting should be done at the appropriate time of year based on weather conditions and the time
9 of year when ground disturbance occurs. The certificate holder shall choose planting methods
10 based on site-specific factors such as slope, erosion potential and the size of the area in need of
11 revegetation. Disturbed ground may require chemical or mechanical weed control before weeds
12 have a chance to go to seed. Two common application methods are described as follows.

13 (a) Broadcasting

14 Broadcast the seed mix at the specified application rate. Where feasible, apply half of the
15 total mix in one direction and the second half of mix in direction perpendicular to first half.
16 Apply weed free straw from a certified field or sterile straw at a rate of two tons per acre
17 immediately after applying seed. Crimp straw into the ground to a depth of two inches using a
18 crimping disc or similar device. As an alternative to crimping, a tackifier may be applied using
19 hydroseed equipment at a rate of 100 pounds per acre. Prior to mixing the tackifier, visually
20 inspect the tank for cleanliness. If remnants from previous hydroseed applications exist, wash
21 tank to remove remnants. Include a tracking dye with the tackifier to visibly aid uniform
22 application. Broadcasting should not be used if winds exceed five miles per hour.

23 (b) Drilling

24 Using an agricultural or range seed drill, drill seed at 70 percent of the recommended
25 application rate to a depth of ¼ inch or as recommended by the seed supplier. Where feasible,
26 apply half of the total mix in one direction and the second half of mix in direction perpendicular
27 to first half. If mulch has been previously applied, seed may be drilled through the mulch
28 provided the drill is capable of penetrating the straw resulting in seed-to-soil contact conducive
29 for germination.

30 **2. Seed Mix**

31 (a) Seed Mix 1 – Dry Land Wheat

32 The certificate holder shall seed temporarily disturbed agricultural areas with wheat or
33 other crop seed. The certificate holder shall consult with the landowner and farm operator to
34 determine species composition, seed and fertilizer application rates and application methods.

35 (b) Seed Mix 2 – CRP

36 The certificate holder shall seed temporarily disturbed CRP areas with a mix compatible
37 with the CRP goals. The certificate holder shall consult with ODFW and the landowner to
38 determine the species composition, application rate, use of fertilizers and application methods.

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1 (c) Seed Mix 3 – Grassland

2 The certificate holder shall apply Seed Mix 3 to all temporarily disturbed areas that are
3 not cultivated farmland or CRP areas. The composition and application rate of Seed Mix 3 will
4 be determined in consultation with ODFW and the landowners and will be subject to the
5 approval of the Oregon Department of Energy (Department). The certificate holder shall use seed
6 provided by a reputable supplier and complying with the Oregon Seed Law. The mix should
7 contain native species selected based on relative availability and compatibility with local
8 growing conditions. Factors that will be taken into consideration are soil erosion potential, soil
9 type, seed availability and the need for using native or native-like species.

10 **IV. Monitoring**

11 **1. Monitoring Procedures**

12 In the year following each seeding, the certificate holder shall employ a qualified
13 investigator (an independent botanist or revegetation specialist) to examine all seeded grassland
14 and CRP areas to assess vegetation cover (species, structural stage, etc.) and progress toward
15 meeting the success criteria. The qualified investigator shall revisit the revegetation areas on an
16 annual basis until the certificate holder and the Department agree that the areas are trending
17 toward meeting the success criteria. Thereafter, the qualified investigator shall revisit the
18 revegetation areas every five years for the life of the KWP to assess vegetation cover and
19 success. The certificate holder shall report the investigator’s findings and recommendations
20 regarding revegetation progress and success to the Department on an annual basis as part of the
21 annual report on the KWP.

22 In consultation with the ODFW, the certificate holder’s qualified investigator shall
23 choose reference sites near the revegetated areas to represent the target conditions for the
24 revegetation effort. The target conditions for each revegetated area are conditions that would be
25 realistically attainable for the area. Land use patterns, soil type, local terrain and noxious weed
26 densities should be considered in selecting reference sites. It is likely that several reference sites
27 will be necessary to adequately represent the various habitat conditions within the project area.

28 Once the reference sites are chosen, they will be used for comparison during all
29 subsequent monitoring visits, unless some event (such as wildfire) significantly changes
30 vegetation conditions so that a particular reference site no longer represents a realistically
31 attainable goal for the associated revegetated area. In that case, the qualified investigator shall
32 choose a new reference site.

33 At each monitoring location, the investigator shall evaluate the following parameters
34 (both within the revegetated area and within the reference site):

- 35 • Degree of erosion due to construction activities (high, moderate or low).
36 • Average number of stems of desirable vegetation per square foot.

37 The investigator shall evaluate the revegetated area and the reference site separately to
38 determine revegetation success.

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1 2. Success Criteria

2 A temporarily disturbed grassland or CRP area is successfully revegetated when the
3 average desirable vegetation stem density within the revegetated area is greater than, or equal to,
4 that observed in the comparable reference site. Desirable vegetation means those species
5 included in the seed mix or native or naturalized species common to similar areas.

6 In each monitoring report to the Department, the certificate holder shall provide an
7 assessment of revegetation success in grassland or CRP restoration areas. The Department may
8 require reseeding or other corrective measures in those areas that do not meet the success criteria.
9 The Department may exclude small areas from the reseeding requirement, if erosion from
10 construction activities is low, if total vegetative cover (of native and non-native species together)
11 exceeds 30% and if weed encroachment has made native seed establishment impossible.

12 Cultivated agricultural areas are successfully revegetated if the replanted areas achieve
13 crop production comparable to adjacent non-disturbed cultivated areas. The certificate holder
14 shall consult with the landowner or farmer to determine whether these areas have been
15 successfully revegetated and shall report to the Department on the success of revegetation in
16 these areas.

17 V. Amendment of the Plan

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

Klondike III Wind Project: Habitat Mitigation Plan

[NOVEMBER 3, 2006]

I. Introduction

This plan describes methods and standards for enhancement of an area of land near the Klondike III Wind Project (KWP) to mitigate for the permanent impacts of the KWP on wildlife habitat.¹ The certificate holder shall enhance the mitigation site as described in this plan and shall place the site into a conservation easement for the life of the KWP facility. 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. The plan specifies monitoring procedures to evaluate enhancement success and recommended remediation if enhancement is unsuccessful in any part of the mitigation site.

II. Description of the Permanent Impacts

The KWP would permanently affect approximately 71 acres. Most of the area of permanent impact (approximately 63 acres) would be within currently cultivated agricultural fields. This area is lower-value habitat (Category 6). The KWP facility would occupy approximately 8.5 acres of higher-value habitat, based on a worst-case estimate. The actual area of each habitat category that the KWP will permanently occupy will depend on the final design layout of the facility after consideration of micrositing factors. The area of permanent impact includes habitat in Categories 2, 3 and 4.

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. Conducting a study at the KWP to determine whether operation of the facility will have 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 holder will provide additional mitigation, based on the assumed likelihood that operation of the KWP would reduce the quality of nearby habitat that is important or essential for grassland bird species. The affected habitat near the KWP wind turbines includes habitat in Categories 2 and 3.

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 2:** essential habitat for a fish or wildlife species, population, or unique assemblage of species that is limited either on a physiographic province or site-specific basis depending on the individual species, population or unique assemblage.

Mitigation Goal: no net loss of either habitat quantity or quality and provision of a net benefit of habitat quantity or quality.

¹ This plan is incorporated by reference in the site certificate for the KWP 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.

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- **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.

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

Mitigation Goal: no net loss in either existing habitat quantity or quality.

III. Calculation of Mitigation Area

The area that is needed to mitigate for the amount of higher-value habitat occupied by KWP turbines and related facilities is determined by the “footprint” of the KWP 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, a rough calculation of potential displacement impact was done by assuming a 50-percent reduction in use by grassland birds within 50 meters of wind turbines.² It was also assumed that grassland birds use Conservation Reserve Program (CRP) land at a rate that is 50-percent of their use of native grassland and upland tree habitat (and therefore that the amount of mitigation area should be half as much for CRP displacement as for native grassland displacement). It was 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”). For both footprint and displacement impacts within Category 2 habitat, the mitigation area was calculated on a 2:1 ratio to meet the ODFW goal of a “net benefit of habitat quantity or quality.” The area of impact within each affected habitat category and the corresponding mitigation area for each category are as follows:

Category 2

Footprint impacts: 0.7 acres

Displacement impacts: 2.9 acres

Mitigation area: 3.6 acres x 2 = 7.2 acres

Category 3 (grassland and upland tree habitat)

Footprint impacts: 0.5 acres

Displacement impacts: 2.7 acres

Mitigation area: 3.2 acres

Category 3 (CRP)

Footprint impacts: 7.3 acres

Displacement impacts: 24.6 acres

Mitigation area: $(7.3 + (50\% \times 24.6)) = 19.6$ acres

Category 4

Footprint impacts: 0.1 acres

Displacement impacts: 0 acres

Mitigation area: 0.1 acres

Total mitigation area (rounded): 30 acres

² 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.

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1 The rough calculation of potential displacement impact described above was based in part
2 on data collected at the Stateline Wind Project and reported in the *Stateline Wind Project*
3 *Wildlife Monitoring Final Report, July 2001 - December 2003* (2003 report). Additional data
4 will be collected at Stateline in 2006 and (if any Stateline 3 turbines are built) in 2010. If analysis
5 of this additional data demonstrates a statistically significant displacement effect on grassland
6 bird species that is greater than the displacement effect described in the 2003 report, then the
7 certificate holder shall assume that the Klondike III facility is having a greater displacement
8 effect on grassland species than was assumed when the site certificate was issued and shall
9 propose additional mitigation. The Department shall recommend appropriate mitigation to the
10 Council, and the certificate holder shall implement mitigation as approved by the Council.

11 IV. Description of the Mitigation Site

12 The certificate holder shall select a 30-acre mitigation site in proximity to the facility
13 where habitat enhancement is feasible. The certificate holder shall determine the final location of
14 the mitigation area consistent with this plan in consultation with ODFW and the affected
15 landowners and subject to the approval of the Oregon Department of Energy (Department). The
16 certificate holder shall acquire the legal right to create, maintain and protect the habitat
17 mitigation area for the life of the facility by means of an outright purchase, conservation
18 easement or similar conveyance and shall provide a copy of the documentation to the
19 Department.

20 V. Habitat Enhancement Methods

21 The goal of habitat enhancement is to improve the habitat quality of the mitigation site to
22 achieve, over time, a Category 2 quality over most, if not all, of the site. The mitigation site may
23 include land that has been managed under a CRP contract, which may previously have been
24 planted with non-native species, including intermediate wheatgrass (*Agropyron intermedium*)
25 and crested wheatgrass (*Agropyron cristatum*). It is common to find non-native species such as
26 cheat grass between the planted grasses on CRP land. The goal of habitat enhancement is to
27 diversify the vegetation on the mitigation site to provide long-term, structurally mature,
28 functional grassland habitat.

29 If the selected mitigation site includes CRP land, the certificate holder will work with the
30 Farm Service Agency (FSA) and the landowner to develop habitat improvement measures for the
31 site that would benefit wildlife. The certificate holder would consult with the FSA before
32 performing any work on land under a CRP contract to ensure consistency with the intent of the
33 CRP contract.

34 Weed control on the mitigation site will contribute to lessening noxious weed expansion
35 on the site and on any nearby grassland, CRP or cultivated agricultural land and would result in
36 lessening competition to the desirable seeded and naturalized vegetation as recovery progresses.
37 The enhancement measures would proceed in phases. Before or during construction of the KWP,
38 the certificate holder shall begin the enhancement measures. The first phase is to clear non-native
39 species and weeds through a combination of spraying and mowing, followed by planting with
40 desirable grasses, forbs and woody shrubs. After the new vegetation is established, the quality of
41 the habitat will be maintained for the life of the KWP by continued weed control, fire control and
42 reseeding as necessary. The certificate holder shall repeat enhancement measures as necessary to
43 meet the success criteria. The following steps summarize the process:

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- 1) Herbicide application. Herbicides would be sprayed on existing vegetation and newly emerging weeds to prevent them from seeding and spreading. If Roundup is used instead of herbicides to prevent the build up of herbicide residue, it will be sprayed early and often (3 times) during the growing season. Alternating strips of CRP would be prepared for seeding with native-like species, and the remaining areas would be left in place to reduce the potential for wind erosion. In time, desirable plant seed sources in the new strips would infiltrate into the non-native strips to increase the overall species diversity.
- 2) Seeding and Planting. Native-like grass and forbs will be planted in the fall or early winter, so that seeds can soak up moisture during the winter. The mitigation seed mix will be determined in consultation with the landowner and ODFW. A no-till drill would be used for seeding. The no-till drill uses a series of smaller disks to create divots in the ground, and then plants the seeds in these divots with a seeding tube. The no-till drill does not require that site be tilled or disked prior to seeding. The drill would be used in several directions to mask the appearance of row crops and provide a more natural "bunchgrass" appearance over time. The certificate holder shall consult with ODFW regarding species of woody shrubs appropriate for the site. Such species could be included in the seed mix or small plants could be planted.
- 3) Continued Weed Control. After grasses have established, weed control methods would continue during first growing season and as needed thereafter (on both seeded and non-seeded strips). Weeds would be controlled with herbicides during the first year, which can reduce persistent weeds after seeding. Hand-pulling weeds can also be very effective for small areas but would be limited to noxious weeds listed by Sherman County. Spot-spraying can be used instead of total area spray to protect locations where young desirable forbs that may be growing.
- 4) Fire Control. The certificate holder will require the operations contractor to be the responsible party for wildfire suppression on the mitigation site for the life of the KWP.

VI. Monitoring

1. Monitoring Procedures

In the year following the first seeding and continuing annually thereafter until the success criteria have been met, the certificate holder shall hire a qualified investigator (an independent botanist or revegetation specialist) to examine all seeded and planted areas to assess vegetation cover (species, structural stage, etc.) and progress toward meeting the success criteria. The qualified investigator shall revisit the mitigation area on an annual basis until the certificate holder and the Department agree that the area is trending toward meeting the success criteria. Thereafter, the qualified investigator shall revisit the mitigation area every five years for the life of the KWP to assess vegetation cover and success. The certificate holder shall report the investigator's findings and recommendations regarding habitat mitigation progress and success to the Department on an annual basis as part of the annual report on the KWP.

2. Success Criteria

Areas within the mitigation site are successfully revegetated when total canopy cover of all vegetation exceeds 30 percent and at least 25 percent of the ground surface is covered by desirable species. Desirable species are native species or desirable non-native species in the

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1 mitigation seed mix. Successful “enhancement” of the mitigation site means that a Category 2
2 habitat quality exists over at least 80 percent of the mitigation area.

3 After predominantly desirable vegetation has been established, the investigator shall
4 verify, during subsequent visits, that the plant communities within the mitigation site continue to
5 meet the success criteria for revegetation. In addition, the investigator, in consultation with
6 ODFW, shall evaluate the percentage of the mitigation site that has been enhanced to a Category
7 2 quality.

8 If all or part of the habitat within the site falls below the revegetation or enhancement
9 success criteria levels, the investigator shall recommend corrective measures. The Department
10 may require reseeded or other corrective measures in those areas that do not meet the success
11 criteria. The Department may exclude small areas from the reseeded requirement where the
12 potential for erosion is low and if total vegetative cover (of native and non-native species
13 together) exceeds 30 percent.

14 VII. Amendment of the Plan

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